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ABSTRACT

The New York City Adult Literacy Initiative was instituted in 1984. Approximately 22,000 students attended the city's literacy program in 1984, with the number increasing to nearly 50,000 by 1986. A study examined one year, 1985-1986, of the program's operation. Of the 49,986 students enrolled in 1985-1986, 40,754 were in bilingual education (BE) or English for speakers of other languages (ESOL) programs. The remaining 9,232 were enrolled in high school equivalency or other adult reading programs. Fifty-nine percent of the BE and ESOL students were female; 58.6 percent of the BE students were Black and 30.4 percent were Hispanic. Of the BE and ESOL students, 37.2 percent were employed full-time, 8.7 percent were employed part time, and 40.1 percent were unemployed. The average BE and ESOL student is 33.33 years old. Very few reported their incomes. For those who did, the average annual income was $7,773. Almost 25 percent of the BE students and just under 20 percent of the ESOL students separated from the program during the course of the fiscal year. The BE students averaged achievement gains of about 8.5 months, and the ESOL students averaged gains of 13.2 raw score points. (Appendixes contain a discussion of the creation of the data files used in the analysis and a guide to the tables of demographic data.) (MN)

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ANALYSIS OF NEW YORK CITY'S ADULT LITERACY DATA: 1985-1986

FINAL REPORT

Metis Associates, Inc.

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

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This report has been prepared under contract with the Office of the Mayor, the City of New York as part of the support service component of the New York City Adult Literacy Initiative.

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PREFACE

The New York City Adult Literacy Initiative was instituted in 1984 with the goal of extending and strengthening adult literacy services throughout the city. The Initiative is a collaborative effort of the New York City Mayor's Office, using Municipal Assistance Corporation funds, and the New York State Education Department, using federal Adult Education Act monies combined with state Employment Preparation Education funds and other funds which are administered by the State Education Department in support of literacy services.

The institution of the New York City Adult Literacy Initiative and the infusion of funds into the provision of literacy services throughout New York City, meant that thousands of adults and older youth who had not previously been able to obtain instruction entered classroom or tutorial programs in all five boroughs. Approximately 22,000 students attended literacy programs in fiscal year 1984. The following year saw this number double, and by fiscal year 1986 nearly 50,000 students participated in programs operated by the New York City Board of Education, the City University of New York, a broad range of community-based organizations, and the three public library systems.

The breadth and diversity of the programs, the services provided and the populations served, combined with the rapid expansion of adult literacy programs in New York City, made it increasingly more important to obtain timely and reliable information about the impact of the expansion on participants and programs. This required standardization of data collected across programs. The Literacy Assistance Center was commissioned by the New York City Mayor's Office of Youth Services and the State Education Department to develop a computerized management information system for use by programs throughout the city. The aim was a system that would provide standardized data for reports to funders; accessible data for each program on its own students, services and outcomes; and individual data on each student in order to create a city-wide data base for literacy research.

This report presents the initial findings of the analysis of the city-wide data base from program year 1985-1986, the first year for which such a data base was available. The statistical analyses performed focused on two areas:

- demographics, to provide a picture of the students attending New York City's adult literacy programs; and

- outcomes, to provide a preliminary examination of the amount of program contact these students have, their achievement test gains and the relationship between these.

We believe these results are of significant interest to the field, and we look forward to extending and expanding these analyses with further data in the coming year, both to test the validity of the results and to broaden the areas of investigation, thus increasing the value of the analyses of this unique data base.

A project of this size owes a debt of thanks to many people who contributed in various ways. While it is impossible to mention all of them here, we do want to acknowledge particularly the assistance and support of Marian L. Schwarz, Lynne Weikart and Suzanne Carothers of the Mayor's Office of Youth Services and Garrett Murphy, Russell Kratz and Lois Matheson of the State Education Department for their vision in making possible a city-wide research data base, and for their continuing support and very helpful input as the research progressed. Stanley J. Schneider of Metis Associates contributed his analytical skills and educational expertise to all phases of the project and has been essential to its success.

Finally, very special thanks are due to the staff and directors of New York City's literacy programs and to the literacy provider agencies for their many hours of work collecting and verifying the data which form the basis for this analysis, and for their comments and suggestions based on early presentations of these findings.

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Analysis of New York City's Adult Literacy Data: 1985-1986

Final Report: Executive Summary

I. Background and Objectives

A. Background

As it is presently constituted, the New York City adult literacy education system includes the Board of Education (BOE), the City University of New York (CUNY), the Community Development Agency (CDA), and the New York City Public Libraries. Each of these literacy providing agencies (LPAs) operates various instructional programs designed to improve basic skills among adults and older youth. Currently more than 50,000 students (of an estimated one million illiterate adults in New York City) participate in basic literacy programs in New York City, and this number is growing. In 1984, the New York City Municipal Assistance Corporation (MAC) commissioned the development of an automated management information system (MIS) for New York City's literacy programs.

When MIS development began in 1984, each of the LPAs had a system in place to collect and report program-related data, and these systems were quite varied. For instance, the Board of Education had (and still maintains) a data base for all of its literacy classes stored on its central mainframe computer. By

contrast, each of CUNY's campuses operated with their own manual system for data collection. Community-based organizations (CBOs), whose programs are overseen by the CDA, and libraries also had manual systems, however there was no uniformity among them, or between them and the BOE or CUNY.

In its current stage of development, the citywide management information system has two major components - the BOE's mainframe system, and the micro-computer Adult Literacy Information and Evaluation System (ALIES) which supports the information processing needs of a growing number of CBOs, CUNY campuses and BOE regions. These two components contain almost identical data elements, and make use of generally consistent definitions.

During the 1985-1986 school year, Metis Associates, Inc. was retained to test the feasibility of concatenating six-month interim data from these two components (BOE and ALIES) and to conduct some preliminary statistical studies with the concatenated file. The feasibility study successfully demonstrated the system's potential as a research tool. (See Preliminary Analysis of Adult Literacy Data: A Feasibility Study, 1986.)

B. Central Objectives

Following the feasibility study, Metis Associates, Inc. was asked to explore systematically the research and evaluation potential of New York City's adult literacy data base. Specifically, the focus of the work was on the:

- creation of a unified data base from the 1985-1986 ALIES and Board of Education (BOE) adult literacy subsystems; and
- comprehensive analysis of student and program data.

This summary reviews the activities performed, as well as the outcomes of the first full year's data analysis.

II. Activities

A. Creation of Concatenated Analytic Files

Metis Associates, Inc. created a unified data base for research and evaluation which combined needed information from the 1985-1986 BOE and ALIES files. The data base contained unit-record data for 49,986 participating students. In order to create an appropriate, combined analytic file, Metis Associates:

- performed various edit and internal consistency checks concerning the appropriateness of response codes and ranges, and the reliability of the data;
- after a review of the description files, after data cleanup resulting from editing activities, and after consultation with a research advisory group, Metis Associates wrote logic which selected appropriate variables for analysis;
- re-coded certain data elements in order to create a uniform structure between the two components (e.g., BOE dates appear as mmddyy, while ALIES dates appear as ddMMMyy; some BOE population codes have different values than ALIES population codes); and
- generated new variables for analyses (e.g., ages [from birth dates], gain scores [from pre-post matches]).

B. Conducting One-Year Analyses

A comprehensive set of analyses was specified and conducted. Analyses included:

- a wide array of demographic studies;
- each demographic study partitioned by borough and by program type;
- analyses of pre-post achievement gains and other program impact results for various cohorts of students; and
- frequency distributions of learning rates (constructed from achievement gains and contact hours) for various cohorts of participating students.

For the above analyses, student cohorts were defined in a number of ways: e.g., by entry achievement level; by program type; by length of service; and by other key factors. In addition to the above basic descriptive and simple (i.e., univariate and bivariate) inferential statistics, multiple regression analyses also were conducted.

III. Results

Findings from the one-year analyses include demographics, program impact/outcome data, and results of the multiple regression analyses. Results are summarized below.

A. Demographics

The concatenated file contains 49,986 records: 40,754 BE & ESOL (16,266 BE, 24,488 ESOL); and 9,232 HSE & Other (6,702 HSE, 2,530 Other).

For the 40,754 BE & ESOL records.....

	BE & ESOL	BE	ESOL
• Borough			
Bronx.....	6,064 (17.1%)	2,646 (19.8%)	3,418 (15.5%)
Manhattan.....	12,268 (34.6%)	3,672 (27.4%)	8,596 (38.9%)
Brooklyn.....	9,866 (27.8%)	4,606 (34.4%)	5,260 (23.8%)
Queens.....	6,989 (19.7%)	2,248 (16.8%)	4,741 (21.4%)
Staten Island.	311 (0.9%)	215 (1.6%)	96 (0.4%)
• Gender			
Male.....	16,331 (40.1%)	6,869 (42.2%)	9,462 (38.6%)
Female.....	24,130 (59.2%)	9,317 (57.3%)	14,813 (60.5%)
Missing.....	293 (0.7%)	80 (0.5%)	213 (0.9%)
• Ethnicity			
Amer. Ind.....	140 (0.3%)	86 (0.5%)	54 (0.2%)
Black.....	11,779 (28.9%)	9,534 (58.6%)	2,245 (9.2%)
Asian.....	5,151 (12.6%)	393 (2.4%)	4,758 (19.4%)
Hispanic.....	19,267 (47.3%)	4,942 (30.4%)	14,325 (58.5%)
White.....	3,986 (9.8%)	1,092 (6.7%)	2,894 (11.8%)
Missing.....	431 (1.1%)	219 (1.3%)	212 (0.9%)

	BE & ESOL	BE	ESOL
• Employment			
Full Time.....	15,162 (37.2%)	4,429 (27.2%)	10,733 (43.8%)
Part Time.....	3,558 (8.7%)	1,842 (11.3%)	1,716 (7.0%)
UNEMP < 52....	7,877 (19.3%)	4,357 (26.8%)	3,520 (14.4%)
UNEMP > 52....	5,218 (12.8%)	2,037 (12.5%)	3,181 (13.0%)
Unavailable...	7,542 (18.5%)	3,055 (18.8%)	4,487 (18.3%)
Missing.....	1,395 (3.4%)	545 (3.4%)	850 (3.5%)
• receive P.A...	8,048 (19.7%)	4,839 (29.7%)	3,209 (13.1%)
• immigrants....	19,558 (48.0%)	3,280 (20.1%)	16,278 (66.5%)
• LEP.....	15,584 (38.2%)	935 (5.7%)	14,649 (59.8%)
• retired.....	2,794 (6.9%)	443 (2.7%)	9,351 (9.6%)
• single parent.	5,390 (13.2%)	3,226 (19.8%)	2,164 (8.8%)
• homemaker.....	4,979 (12.2%)	1,925 (11.8%)	3,054 (12.5%)
• HS grad/equiv.	7,401 (18.2%)	661 (4.1%)	6,740 (27.5%)
• highest grade.	9.53	9.35	9.67
• yrs. US ed....	3.85	7.53	.53
• average age...	33.33	30.87	34.97

- Entry Levels

TABE Reading	BE	John Test	ESOL
< 3.0 (I)..	1,462 (12.6%*)	< 20 (I)..	11,959 (50.6%*)
3 - 4.9 (II)..	2,369 (20.4%*)	21 - 40 (II)..	4,904 (20.8%*)
5 - 6.9 (III)..	5,153 (44.3%*)	41 - 60 (III)..	4,163 (17.6%*)
7 - 8.9 (IV)..	2,656 (22.8%*)	> 60 (IV)..	2,601 (11.0%*)
9 -12.9.....	988 (6.1%)	Missing.....	861 (3.5%)
Missing.....	3,638 (22.4%)		

* percent of Levels I through IV

B. Impact/Outcomes

	BE & ESOL	BE	ESOL
• separated....	8,864 (21.8%)	4,015 (24.7%)	4,849 (19.8%)
• got a job....	1,129 (2.8%)	480 (3.0%)	649 (2.7%)
• job upgrade..	461 (1.1%)	185 (1.1%)	276 (1.1%)
• off P.A.....	206 (0.5%)	149 (0.9%)	57 (0.2%)

	BE & ESOL	BE	ESOL
• contact...	78.63 hours	73.99 hours	81.86 hours
• contact by entry level			
I.....		94.50 hours	76.16 hours
II.....		80.54 hours	87.37 hours
III.....		67.72 hours	88.94 hours
IV.....		74.64 hours	93.67 hours
• average gain.....		8.5 months	13.2 points
• rate/100 hrs.....		13.7 months	19.2 points
• gains by entry level			
I.....		18.2 months	17.3 points
II.....		11.7 months	13.7 points
III.....		7.4 months	8.6 points
IV.....		3.8 months	2.5 points

- gains by contact hours

< 20.....	6.6 months	9.9 points
21 - 40.....	7.9 months	11.8 points
41 - 60.....	8.1 months	12.4 points
61 - 80.....	8.9 months	13.1 points
81 -100.....	8.7 months	13.1 points
101 -120.....	11.4 months	13.1 points
>120.....	9.2 months	14.2 points

C. Multiple Regression Analysis

Multivariate techniques such as multiple regression analysis may be used to study the simultaneous impact of several variables on program outcomes. To demonstrate this approach we have completed one preliminary multiple regression analysis for each program utilizing the following independent variables:

- gender;
- ethnicity;
- employment status;
- public assistance status;
- immigrant status;
- LEP status;
- highest grade completed;
- contact hours;
- age; and
- entry level.

The dependent variable for the analysis was the TABE Reading gain score for BE and the John gain score for ESOL students with matched pre-post data.

For BE, the independent variables yielded a Multiple R of .3322, accounting for only 11 percent of the variance in TABE Reading gains; 89 percent of the variance is not explained by these variables. For ESOL, the independent variables yielded a Multiple R of .3918, accounting for only 15.4 percent of the variance in John score gains; 84.6 percent remains unexplained.

While the preliminary regression analyses leave a great deal of the variances unaccounted for, entry level appears to show a statistically significant and meaningful effect in both the BE and ESOL analyses. In both cases, the higher the entry level, the smaller the gain. In addition, for the ESOL analysis, LEP status and employment status (if unemployed for less than 52 weeks) explain significant and meaningful proportions of variance in John Test gains - if LEP, gains are smaller; if unemployed for less than 52 weeks, gains are larger.

Due to the large samples in the BE and ESOL analyses, a number of the other independent variables also explain statistically significant amounts of variance. However, the magnitudes of these effects are too small to permit supportable inferences here.

It is important to note the limitations of the data used in these regression analyses. However, we present the above results to illustrate a direction for future study - to reliably describe the nature of the relationships between various program components, characteristics of participants, and project outcomes.

IV. Importance of the Study

A data base as complex and complete as New York City's BOE/ALIES system exists no where else. As demonstrated in this summary, such an information system can serve as a rich resource for enhancing our understanding about adult education and the

adult learner.

The current analysis represents one significant component of an ongoing, multi-faceted research agenda regarding adult literacy education in New York City. The availability of a flexible, unit-record information system, such as the one described in this summary, will greatly facilitate an iterative inquiry process for needed research efforts. The outcomes of such investigations will support the future development and refinement of adult literacy programs.

Analysis of New York City's Adult Literacy Data: 1985-1986

Final Report

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Analysis of New York City's Adult Literacy Data: 1985-1986

Final Report

I. Introduction

A. Purpose and Central Objectives

Metis Associates, Inc. was retained by the Literacy Assistance Center, Inc. (LAC) to explore systematically the research and evaluation potential of New York City's adult literacy data base. Specifically, the focus of the work was on the:

- creation of a unified data base from the 1985-1986 ALIES and Board of Education (BOE) adult literacy subsystems;
- comprehensive analysis of student and program data; and
- design of longitudinal and follow-up studies for subsequent research.

B. Background

As it is presently constituted, the New York City adult literacy education system includes the Board of Education (BOE), the City University of New York (CUNY), the Community Development Agency (CDA), and the New York City Public Libraries. Each of these literacy providing agencies (LPAs) operates various instructional programs designed to improve basic skills among adults and older youth.

When the LAC began its work in 1984, each of these LPAs had a system in place to collect and report program-related data, and these systems were quite varied. For instance, the Board of Education had (and still maintains) a data base for all of its literacy classes on its central mainframe computer. By contrast, each of CUNY's campuses operated with its own manual system for data collection. Community-based organizations (CBOs), whose programs are overseen by the CDA, and libraries also had manual systems. There was no uniformity among these manual systems, or with the BOE's or CUNY's systems.

In an effort to develop a citywide management information system, the LAC has had to work with these differences and design a system that would function equally well for all of the LPAs and their respective programs. In addition, the LAC has had to coordinate its plan with the existing documentation system and data collection needs of the New York State Education Department.

In its current stage of development, the citywide management information system has two major components - the BOE's mainframe system, and the micro-computer ALIES system which supports the information processing needs of a growing number of CBOs, CUNY campuses and BOE regions. These two components contain almost identical data elements, and make use of generally consistent definitions.

During the 1985-1986 school year, Metis Associates, Inc. was retained by the Literacy Assistance Center, Inc. to test the

feasibility of concatenating interim (i.e., July 1 through December 31, 1985) data from these two components (BOE and ALIES) and to conduct some preliminary statistical studies with the concatenated file. The feasibility study successfully demonstrated the system's potential as a research tool. (See Preliminary Analysis of Adult Literacy Data: A Feasibility Study, Metis Associates, Inc., 1986.)

A data base as complex and complete as New York City's BOE/ALIES system exists no where else. As demonstrated in Metis Associates' feasibility study, such an information system can serve as a rich resource for enhancing our understanding about adult education and the adult learner. The current work addresses the need to begin a systematic exploration of this research potential.

II. Methodology

A. Creation of Concatenated Analytic Files

Metis Associates, Inc. created a unified data base for research and evaluation which combines needed information from the 1985-1986 BOE and ALIES files. Metis received for this task: a) a standard label, 501 byte, 6250 BPI, 9-track magnetic tape and documentation describing the file layout for the 40,000+ BOE individual student records; and b) five separate (ROSTER, STUDENT, HOURS, TEST and IMPACT) files (on floppy disks) and documentation, with multiple records per student, for the 10,000+ students on the ALIES system. Specific steps followed

by Metis Associates for creating the unified data base are listed in Appendix A.

B. Conducting One-Year Analyses

After consultation with the LAC, Metis Associates specified a comprehensive set of analyses for the concatenated data file. Specifications for the analyses considered, among other factors, the presence of missing information. Missing data are inevitable, and the patterns of missing data are informative. Much can be gained by determining which variables are partially observed, which cases have many missing variables, and the overall pattern of missing data. Metis Associates uses a proprietary statistical software package, P-STAT, to perform the specified studies in time-sharing mode on Princeton's large mainframe computer.

Completed descriptive analyses include:

- such demographic studies (cross-tabulated frequency distributions) as:
  - age (created from birth dates) by race and gender;
  - mean family income by age, race and gender;
  - age by employment status;
  - race by employment status;
  - gender by employment status;
  - population category by race;
  - population category by gender;
  - handicapping condition by gender;
  - years of U.S. education by race, gender and age; and
  - highest grade completed by race, gender and age.
- each of the above-listed cross-tabulations separately by borough and for basic education (BE) students and for students with limited English proficiency (ESOL);

- analyses of pre-post achievement gains and other program impact results for various cohorts of students; and
- frequency distributions of learning rates (constructed from achievement gains and contact hours) for various cohorts of participating students.

For the above analyses, student cohorts were defined in a number of ways: e.g., by entry achievement level; by program type; by contact hours; and by other key factors. In addition to the above basic descriptive and simple (i.e., univariate and bivariate) inferential statistics, a preliminary multiple regression analysis has been performed.

Multiple regression analysis is an important branch of multivariate analysis. It is a powerful analytic tool, widely applicable to many different kinds of research problems. Multiple regression is a method of analyzing the collective and separate contributions of two or more independent variables to the variance of a dependent variable. To study a construct or variable scientifically, we must be able to identify the sources of the variable's variation. Multiple regression's task is to help "explain" the variance of a dependent variable by estimating the simultaneous contributions of the variance of two or more independent variables. The fundamental task is to develop a theory, i.e., an interrelated set of constructs or variables that presents a systematic view of phenomena by specifying relations among variables, with the purpose of explaining the phenomena (Kerlinger and Pedhazur, 1973).

Multiple regression is well suited to the kind of "ex post

facto" research called for in this project. The analysis of adult literacy data does not lend itself to strict experimental manipulation, to random assignment of equal numbers of subjects to treatment groups, or to partitioning of continuous variables. These problems are reduced substantially with multiple regression analysis. Multiple regression also has the ability to handle dichotomous and continuous variables with equal facility. Finally, the use of multiple regression in research design applications makes the problem of missing data almost negligible.

Many participant and program variables were entered into a regression equation in order to explain as much of the variance as possible. Multiple regression analysis enables us to study correlations among independent variables on each outcome measure (achievement, employment, etc.) Accordingly, we are beginning to identify and test the significance of trends and interactions among variables. Issues of meaningfulness as well as statistical significance are being addressed.

Adult literacy programs are comprised of a rather complex set of strategies serving varied groups of participants, with a wide range of individual differences between and among service providers. Among the LPAs there are a mix of conditions and strategies which, taken together, constitute the literacy services provided to New York City's adults. The analyses are designed to indicate the nature of the relationships between various program components, characteristics of participants, and project outcomes. Multiple regression analysis is therefore

particularly well suited for dealing with the most important research questions related to adult literacy.

III. Findings

Initial findings from the one-year analyses are summarized below. Findings include demographics, outcome data, and results of the initial multiple regression analysis.

A. Demographics

The concatenated file contains records for 49,986 students. Of these students, 40,754 were in BE or ESOL programs - 16,266 in BE, and 24,488 in ESOL. The remaining 9,232 students participated in High School Equivalency and other programs for adults. Findings are presented here only for BE and ESOL students. A complete set of demographic data is available for all students in the file, for BE and ESOL students combined, for BE students only, and for ESOL students only .

Place of Residence. Using zip codes from the students' addresses it was possible to develop a distribution of students' residences by borough. Of the 40,754 BE and ESOL students, zip codes were available for 35,498 (87.1%). Table I includes borough distributions for the BE and ESOL students combined, and separately for BE and ESOL. Parentheses contain percentages for those students with a zip code.

Table I
Students' Place of Residence

	BE & ESOL		BE		ESOL	
Borough	N	%	N	%	N	%
Bronx.....	6,064	(17.1%)	2,646	(19.8%)	3,418	(15.5%)
Manhattan.....	12,268	(34.6%)	3,672	(27.4%)	8,596	(38.9%)
Brooklyn.....	9,866	(27.8%)	4,606	(34.4%)	5,260	(23.8%)
Queens.....	6,989	(19.7%)	2,248	(16.8%)	4,741	(21.4%)
Staten Island.	311	(0.9%)	215	(1.6%)	96	(0.4%)

To illustrate the use of the table, it can be seen in Table I that, for the combined group of BE and ESOL students, the greatest percent live in Manhattan (34.6%); however, for BE students, Brooklyn has the highest percent of participants (34.4%). These data are graphically displayed in Figure 1.

Gender. Data on gender were obtained for 99.3% of the students in the file. Table II summarizes these data for BE & ESOL, for BE, and for ESOL. It can be seen in the table that more than 59% of the BE & ESOL participants were female; among BE there were 57.3% female, and among ESOL the percentage of females rose to 60.5%.

Table II
Students' Gender

	BE & ESOL		BE		ESOL	
Gender	N	%	N	%	N	%
Male.....	16,331	(40.1%)	6,869	(42.2%)	9,462	(38.6%)
Female.....	24,130	(59.2%)	9,317	(57.3%)	14,813	(60.5%)
Missing.....	293	(0.7%)	80	(0.5%)	213	(0.9%)

Ethnicity. Ethnic data were obtained for 98.9% of the BE and ESOL students. Table III summarizes these ethnic data.

Table III
Students' Ethnicity

	BE & ESOL		BE		ESOL	
Ethnicity	N	%	N	%	N	%
Amer. Ind.....	140	(0.3%)	86	(0.5%)	54	(0.2%)
Black.....	11,779	(28.9%)	9,534	(58.6%)	2,245	(9.2%)
Asian.....	5,151	(12.6%)	393	(2.4%)	4,758	(19.4%)
Hispanic.....	19,267	(47.3%)	4,942	(30.4%)	14,325	(58.5%)
White.....	3,986	(9.8%)	1,092	(6.7%)	2,894	(11.8%)
Missing.....	431	(1.1%)	219	(1.3%)	212	(0.9%)

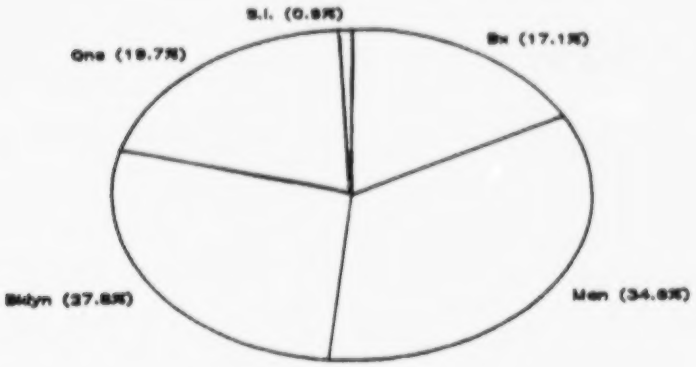
It can be seen in Table III that 58.6% of the BE students were Black; among ESOL students, 9.2% were Black. Hispanics comprise 30.4% of the BE program and 58.4% of the ESOL program. These data are graphically displayed in Figure 2.

Employment Status. Participants were required to describe their employment status as either: employed full time; employed part time; unemployed for less than 52 weeks (<52); unemployed for more than 52 weeks (>52); or unavailable for employment. Employment status data were obtained for 96.6% of the BE and ESOL students. Table IV summarizes these data.

Figure 1

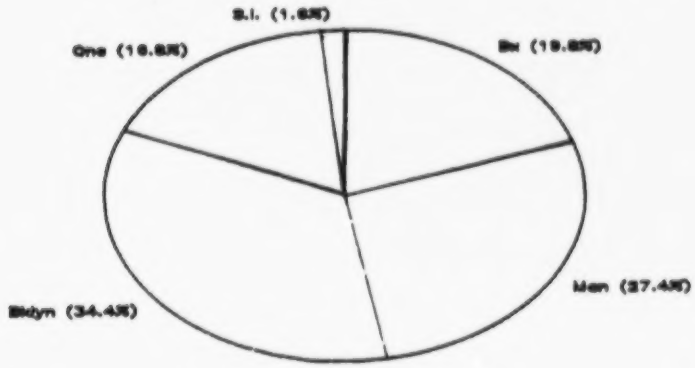
NYC Adult Literacy Data: BE & ESOL

Distribution of Participants by Borough



NYC Adult Literacy Data: BE

Distribution of Participants by Borough



NYC Adult Literacy Data: ESOL

Distribution of Participants by Borough

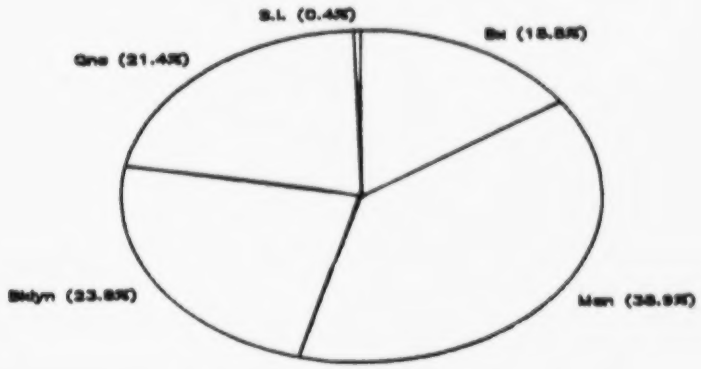
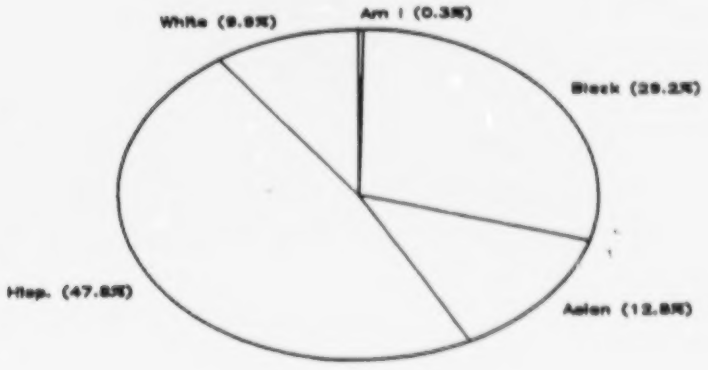


Figure 2

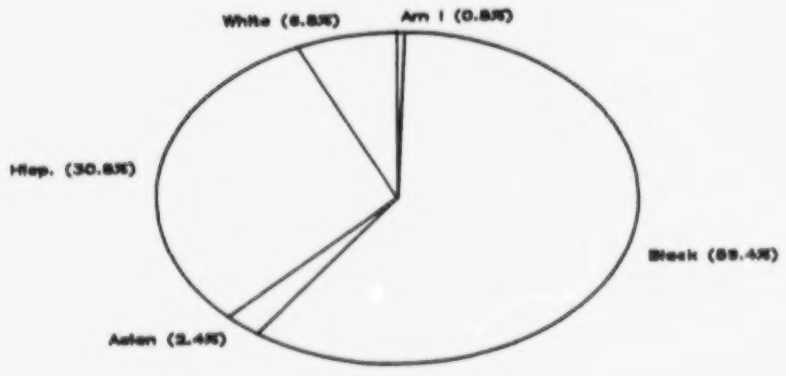
NYC Adult Literacy Data: BE & ESOL

Distribution of Participants' Ethnicity



NYC Adult Literacy Data: BE

Distribution of Participants' Ethnicity



NYC Adult Literacy Data: ESOL

Distribution of Participants' Ethnicity

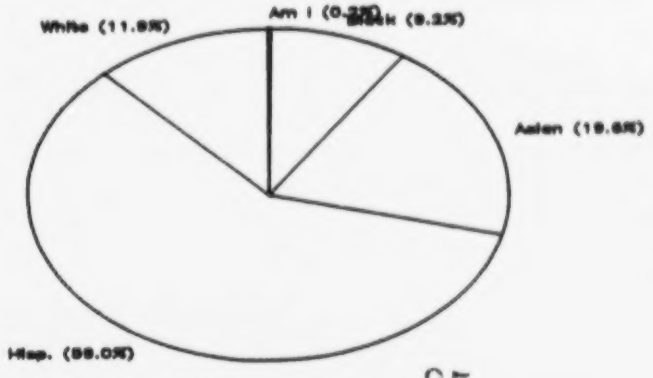


Table IV
Students' Employment Status

	BE & ESOL		BE		ESOL	
Employment	N	%	N	%	N	%
Full Time.....	15,162	(37.2%)	4,429	(27.2%)	10,733	(43.8%)
Part Time.....	3,558	(8.7%)	1,842	(11.3%)	1,716	(7.0%)
UNEMP < 52....	7,877	(19.3%)	4,357	(26.8%)	3,520	(14.4%)
UNEMP > 52....	5,218	(12.8%)	2,037	(12.5%)	3,181	(13.0%)
Unavailable...	7,542	(18.5%)	3,055	(18.8%)	4,487	(18.3%)
Missing.....	1,395	(3.4%)	545	(3.4%)	850	(3.5%)

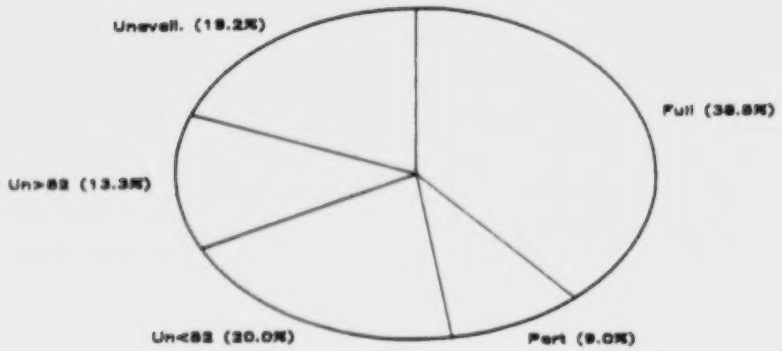
It can be seen in Table IV that 38.5% of the BE students are employed (27.2% full time and 11.3% part time), while more than 50% of the ESOL students are employed (43.8% full time and 7.0% part time). Long term unemployment (>52) was reported for 12.5% of the BE students and 13.0% of the ESOL students. These data are illustrated in Figure 3.

Program Entry Achievement Levels. Program entry achievement levels were determined for BE students from pretest TABE Reading grade equivalent scores, and for ESOL students from pretest John Test raw scores. Table V contains the distribution of students by entry achievement level. Asterisks indicate percent distributions within the first four achievement levels for each program.

Figure 3

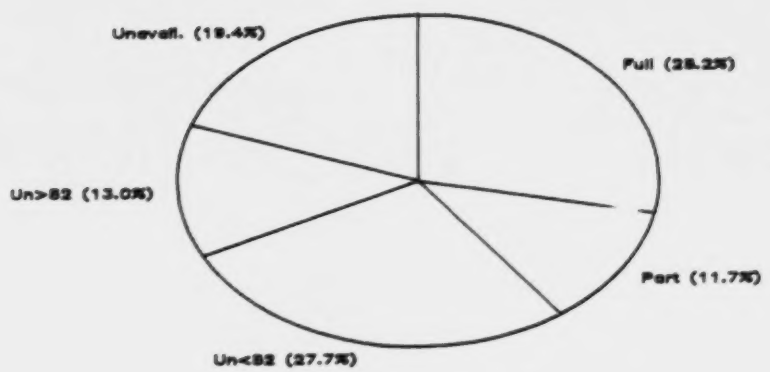
NYC Adult Literacy Data: BE & ESOL

Participants' Employment Status



NYC Adult Literacy Data: BE

Participants' Employment Status



NYC Adult Literacy Data: ESOL

Participants' Employment Status

Table V
Students' Entry Achievement Levels

BE			ESOL		
TABE Reading	N	%	John Test	N	%
< 3.0 (I)..	1,462	(12.6%*)	< 20 (I)..	11,959	(50.6%*)
3 - 4.9 (II)..	2,369	(20.4%*)	21 - 40 (II)..	4,904	(20.8%*)
5 - 6.9 (III)..	5,153	(44.3%*)	41 - 60 (III)..	4,163	(17.6%*)
7 - 8.9 (IV)..	2,656	(22.8%*)	> 60 (IV)..	2,601	(11.0%*)
9 -12.9.....	988	(6.1%)	Missing.....	861	(3.5%)
Missing.....	3,638	(22.4%)			

* percent of Levels I through IV

It can be seen in Table V that pretest data were obtained for 77.6% of the BE students and 96.5% of the ESOL students. Approximately 70% of the BE students enter the program in levels III and IV, while more than 70% of the ESOL students enter in levels I and II. These data are illustrated in Figure 4.

Appendix B contains a number of tables which show, for BE and for ESOL, the relationship between entry achievement level and several of the key demographic characteristics. Appendix B begins with a guide to describe how to read the tables. The tables, which are internally numbered, include:

- Table 1. BE entry level by gender;
- Table 2. BE entry level by ethnicity;
- Table 3. BE entry level by employment status;
- Table 4. ESOL entry level by gender;
- Table 5. ESOL entry level by ethnicity;
- Table 6. ESOL entry level by employment status;
- Table 7. BE entry level by public assistance, immigrant and LEP status;
- Table 8. ESOL entry level by public assistance, immigrant and LEP status;
- Table 9. BE entry level by highest grade completed;
- Table 10. BE entry level by years of U.S. education;
- Table 11. ESOL entry level by highest grade completed; and
- Table 12. ESOL entry level by years of U.S. education.

Miscellaneous. The average BE & ESOL student is 33.33 years old; BE students are approximately 31 years old, while ESOL students average approximately 35. The average BE and ESOL participant has completed school beyond the ninth grade. For BE students there is a reported average of 7.53 years of prior schooling in the United States.

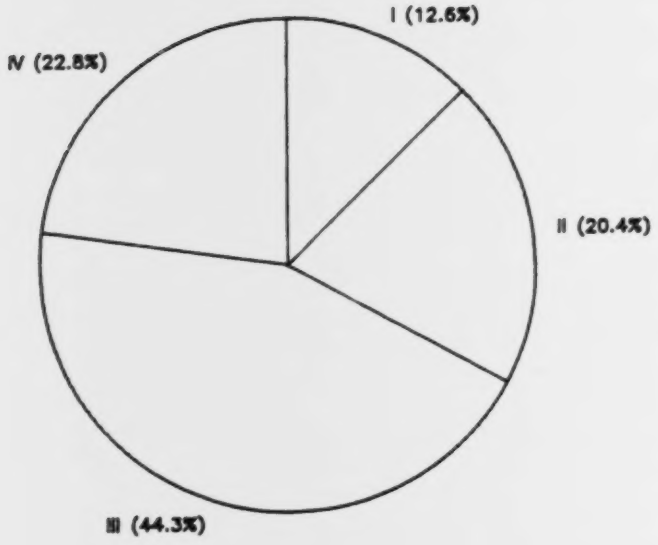
As might be expected, very few students reported their annual family income (reporting this information was optional) - 898 BE students and 1,622 ESOL students. For those who did report income, the annual average was $7,773.; $9,584. for BE and $6,771. for ESOL. Income reported for BE men far exceeded salaries for BE women ($12,017. versus $7,868.), while income among ESOL men and women was approximately equal.

A number of additional demographic characteristics are summarized in Table VI. These data were derived from a multiple response grid included with the Individual Student Record Form. Because of the nature of this aspect of the data collection, it is likely that the data reported below are under counts. For example, by definition, 100% of ESOL students should be LEP (limited English proficient), while fewer than 60% of the ESOL respondents are reported to be LEP. Similarly, we suspect that many more than 19.7% of the BE & ESOL population receive some form of public assistance (P.A.). However, due to the sensitive nature of this data element, students may tend to withhold this information. The reader is therefore advised to interpret these data with caution.

Figure 4

NYC Adult Literacy Data: BE

Participants' Entry Achievement Levels



NYC Adult Literacy Data: ESOL

Participants' Entry Achievement Levels

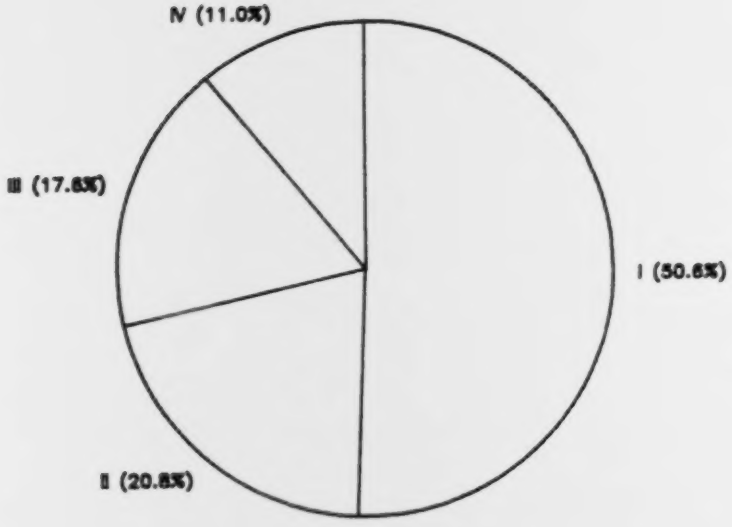


Table VI
Miscellaneous Student Demographic Data

	BE & ESOL		BE		ESOL	
Miscellaneous	N	%	N	%	N	%
receive P.A...	8,048	(19.7%)	4,839	(29.7%)	3,209	(13.1%)
immigrants....	19,558	(48.0%)	3,280	(20.1%)	16,278	(66.5%)
LEP.....	15,584	(38.2%)	935	(5.7%)	14,649	(59.8%)
retired.....	2,794	(6.9%)	443	(2.7%)	9,351	(9.6%)
single parent.	5,390	(13.2%)	3,226	(19.8%)	2,164	(8.8%)
homemaker.....	4,979	(12.2%)	1,925	(11.8%)	3,054	(12.5%)
HS grad/equiv.	7,401	(18.2%)	661	(4.1%)	6,740	(27.5%)

B. Outcomes

This section of the report summarizes several key outcomes of the 1985-1986 BE and ESOL intervention which were included in the unified data base:

- demographics;
- program contact; and
- achievement gains;

Demographics. Tables VII and VIII show, respectively for BE and for ESOL, the number of students who: separated prematurely from the program; obtained a job; received a job upgrade; and came off public assistance. The tables display these data for each category of entry level achievement. It should be noted here that, as with several of the demographic categories, respondents tend to be under counted on such categorical outcome data as: obtained a job, received a job upgrade and came off public assistance. Separation data, since they are collected from attendance information, are likely to be relatively complete.

It can be seen in Table VII that almost 25 percent of the BE students separated from the program during the course of the fiscal year. For ESOL students, it can be seen in Table VIII that just under 20 percent separated. Table VIII also indicates that separations for ESOL students are highest among students who enter at the lowest achievement level (44.3% of those who separate from ESOL enter in the 0-20 John Test category). Such a pattern is not apparent for BE students.

Table IX shows, for both BE and ESOL, the reasons given for program separation. For both BE and ESOL, the reason for separation which was cited most often was "got a job." Approximately 9 percent of the BE separators (354/4,015) and 11.5 percent of the ESOL separators (557/4,849) left the program for this reason.

Table VII

NYC ADULT LITERACY PROGRAMS: ANALYSES OF PROGRAM OUTCOMES
BE - PROGRAM IMPACT

The Column Variable is PRE.TR.LEVEL
Multiple Response Row Variable SEPARATED
to Variable OFF.PUB.ASSIST
Cell Contents are....
Cell Counts
Row Percent
Column Percent

PRE.TR.LEVEL

	0-2.9	3-4.9	5-6.9	7-8.9	9-12.9	MISSING	Row Totals
SEPARATED	495	641	1179	683	246	771	4015
	12.3	16.0	29.4	17.0	6.1	19.2	100.0
	33.9	27.1	22.9	25.7	24.9	21.2	24.7
OBTAINED A JOB	40	53	121	67	38	161	480
	8.3	11.0	25.2	14.0	7.9	33.5	100.0
	2.7	2.2	2.3	2.5	3.8	4.4	3.0
JOB UPGRADED	22	26	51	38	25	23	185
	11.9	14.1	27.6	20.5	13.5	12.4	100.0
	1.5	1.1	1.0	1.4	2.5	0.6	1.1
OFF PUBLIC ASST	12	21	52	34	10	20	149
	8.1	14.1	34.9	22.8	6.7	13.4	100.0
	0.8	0.9	1.0	1.3	1.0	0.5	0.9
Total N	1462	2369	5153	2656	988	3638	16266
Row Pct	9.0	14.6	31.7	16.3	6.1	22.4	100.0
Col Pct	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table VIII

NYC ADULT LITERACY PROGRAMS: ANALYSES OF PROGRAM OUTCOMES
ESOL - PROGRAM IMPACT

The Column Variable is PRE.JO.LEVEL
Multiple Response Row Variable SEPARATED
to Variable OFF.PUB.ASSIST
Cell Contents are....
Cell Counts
Row Percent
Column Percent

PRE.JO.LEVEL

	0-20	21-40	41-60	61 AND ABOVE	MISSING	Row Totals
SEPARATED	2149	1011	955	577	157	4849
	44.3	20.8	19.7	11.9	3.2	100.0
	18.0	20.6	22.9	22.2	18.2	19.8
OBTAINED A JOB	224	160	166	92	7	649
	34.5	24.7	25.6	14.2	1.1	100.0
	1.9	3.3	4.0	3.5	0.8	2.7
JOB UPGRADED	96	62	69	39	10	276
	34.8	22.5	25.0	14.1	3.6	100.0
	0.8	1.3	1.7	1.5	1.2	1.1
OFF PUBLIC ASST	28	17	7	2	3	57
	49.1	29.8	12.3	3.5	5.3	100.0
	0.2	0.3	0.2	0.1	0.3	0.2
Total N	11959	4904	4163	2601	861	24488
Row Pct	48.8	20.0	17.0	10.6	3.5	100.0
Col Pct	100.0	100.0	100.0	100.0	100.0	100.0

Table IX

NYC ADULT LITERACY PROGRAMS: ANALYSES OF PROGRAM OUTCOMES
REASONS FOR SEPARATION

Cell Contents are....
Cell Counts
Row Percent
Column Percent

SEP CODE	PROGRAM: BE	PROGRAM: ESOL	Row Totals
HEALTH PROBLEMS	227 50.3 1.4	224 49.7 0.9	451 100.0 1.1
CHILD CARE PROBS	108 45.8 0.7	128 54.2 0.5	236 100.0 0.6
TRANSPORT. PROBS	25 36.8 0.2	43 63.2 0.2	68 100.0 0.2
FAMILY PROBLEMS	215 44.1 1.3	272 55.9 1.1	487 100.0 1.2
LOCATION OF CLAS	14 28.6 0.1	35 71.4 0.1	49 100.0 0.1
LACK OF INTEREST	81 51.9 0.5	75 48.1 0.3	156 100.0 0.4
TIME CLASS SCHED	153 54.4 0.9	128 45.6 0.5	281 100.0 0.7
MOVED	151 33.9 0.9	294 66.1 1.2	445 100.0 1.1
GOT A JOB	354 38.9 2.2	557 61.1 2.3	911 100.0 2.2
ENTER TRAIN PROG	115 52.3 0.7	105 47.7 0.4	220 100.0 0.5
OTHER EDUC PROG	261 48.0 1.6	283 52.0 1.2	544 100.0 1.3
OTHER REASONS	629 49.8 3.9	633 50.2 2.6	1262 100.0 3.1
UNKNOWN REASONS	1009 42.0 6.2	1395 58.0 5.7	2404 100.0 5.9
MISSING	12924 38.9 79.5	20316 61.1 83.0	33240 100.0 81.6
Total N Row Pct Col Pct	16266 39.9 100.0	24488 60.1 100.0	40754 100.0 100.0

Program contact. BE and ESOL students combined recorded an average of 78.63 hours of program contact during the fiscal year.[1] Tables X and XI show, respectively for BE and ESOL, the students' mean contact hours as they relate to entry achievement level. (Mean contact hours appear as the third entry in each cell of the tables.)

It can be seen in Table X that BE students averaged 73.986 contact hours, and that contact hours for BE students generally declined as entry achievement levels went up. Table XI shows a different pattern for the ESOL students. ESOL students averaged almost 82 hours of contact. For ESOL students, average contact increased as entry level increased. See illustration in Figure 5.

Table XII shows, for BE, ESOL, and BE and ESOL combined, the distribution of various levels of program contact. It can be seen in the table that 22.5 percent of the students show twenty or fewer hours of contact. Only 32.2 percent of the students in Table XII show more than 100 hours of contact during the fiscal year. These data are illustrated in Figure 6.

---

[1] It should be noted that contact hours were recorded within the fiscal year only. For returning students, accrued contact hours from the prior fiscal year were not included in this analysis.

Table X

NYC ADULT LITERACY PROGRAMS: ANALYSES OF PROGRAM OUTCOMES
BE - AVERAGE CONTACT HOURS

VARIABLE IS PRE.TR.LEVEL
Cell Contents are....
Cell Counts
Column Percent
---Mean Score Of Variable --CONTACT.HRS---

	--CONTACT.HRS---
0-2.9	1049
	10.0
	94.495
3-4.9	1649
	15.7
	80.538
5-6.9	3534
	33.7
	67.716
7-8.9	1743
	16.6
	74.635
9-12.9	631
	6.0
	81.084
MISSING	1883
	18.0
	65.610
Total N	10489
Col Pct	100.0
Mean	73.986

Table XI

NYC ADULT LITERACY PROGRAMS: ANALYSES OF PROGRAM OUTCOMES
ESOL - AVERAGE CONTACT HOURS

VARIABLE IS PRE.JO.LEVEL
Cell Contents are....
Cell Counts
Column Percent
---Mean Score Of Variable --CONTACT.HRS---

0-20	6988
	46.2
	76.161
21-40	3197
	21.1
	87.368
41-60	2684
	17.7
	88.935
61 AND ABOVE	1732
	11.4
	93.668
MISSING	536
	3.5
	49.584
Total N	15137
Col Pct	100.0
Mean	81.855

Figure 5

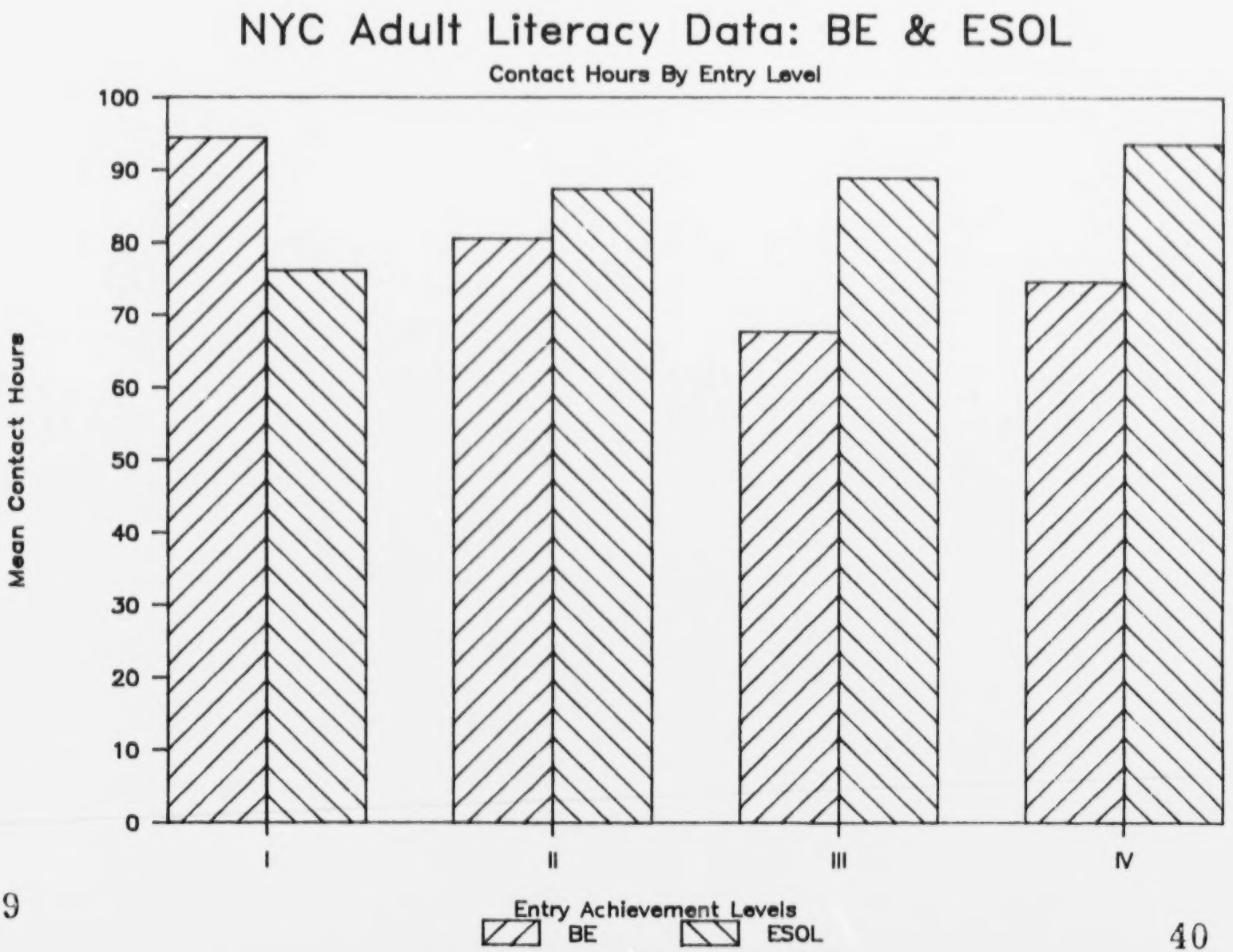

NYC Adult Literacy Data: BE & ESOL
Contact Hours By Entry Level
Mean Contact Hours
100
90
80
70
60
50
40
30
20
10
0
I
II
III
IV
Entry Achievement Levels
BE
ESOL

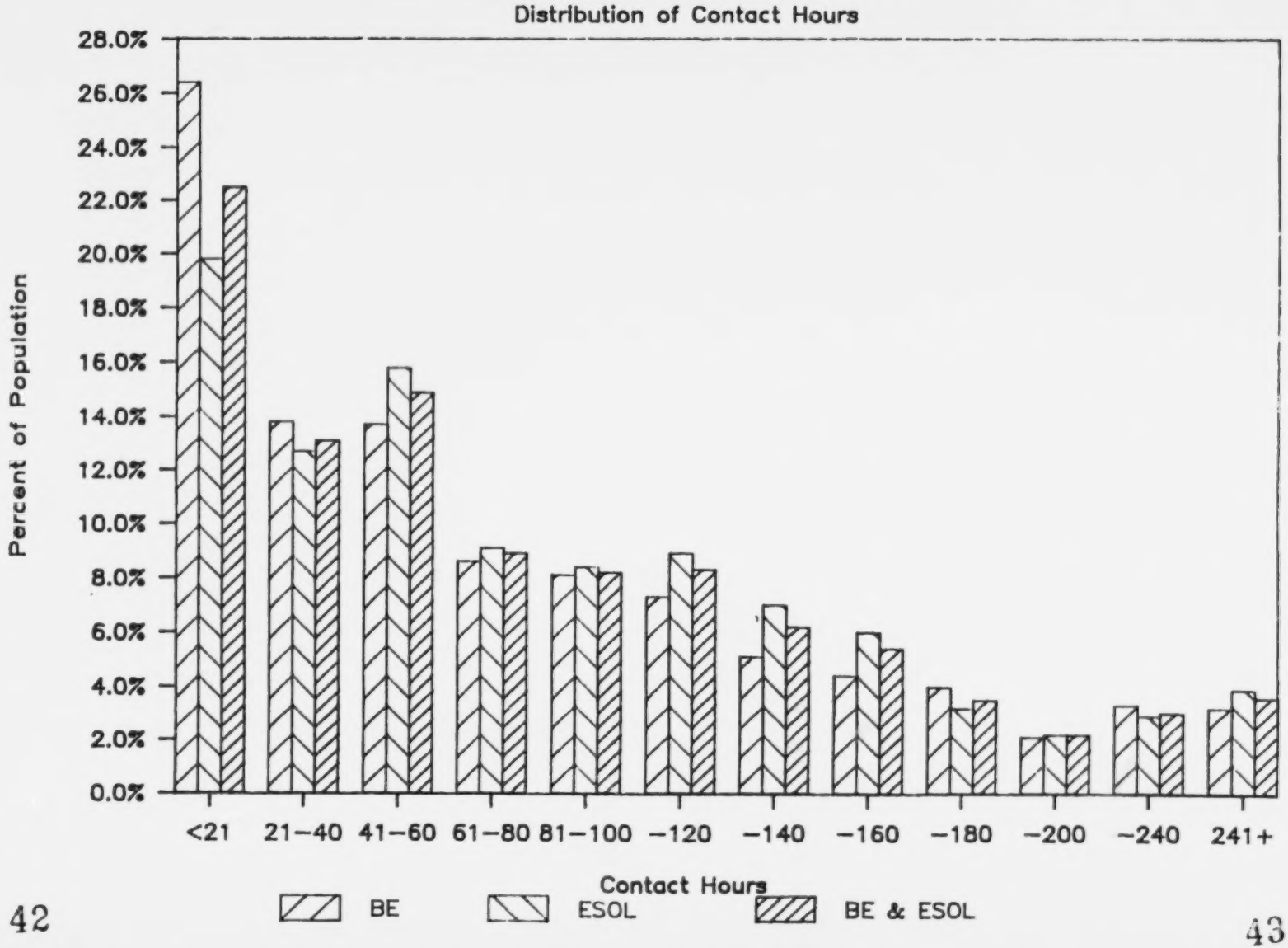
Table XII

NYC ADULT LITERACY PROGRAMS
ANALYSES OF PROGRAM OUTCOMES
FREQUENCY DISTRIBUTIONS OF CONTACT HOURS
Cell Contents are....
Cell Counts
Column Percent

CONTACT HRS	PROGRAM BE	PROGRAM ESOL	Row Totals
0-20 HRS	2774 26.4	3004 19.8	5778 22.5
21-40 HRS	1446 13.8	1920 12.7	3366 13.1
41-60 HRS	1434 13.7	2393 15.8	3827 14.9
61-80 HRS	901 8.6	1382 9.1	2283 8.9
81-100 HRS	846 8.1	1265 8.4	2111 8.2
101-120 HRS	768 7.3	1352 8.9	2120 8.3
121-140 HRS	534 5.1	1061 7.0	1595 6.2
141-160 HRS	465 4.4	909 6.0	1374 5.4
161-180 HRS	416 4.0	486 3.2	902 3.5
181-200 HRS	225 2.1	334 2.2	559 2.2
201-220 HRS	177 1.7	240 1.6	417 1.6
221-240 HRS	165 1.6	202 1.3	367 1.4
241-260 HRS	106 1.0	176 1.2	282 1.1
261-280 HRS	117 1.1	187 1.2	304 1.2
281+ HRS	115 1.1	226 1.5	341 1.3
Total N	10489	15137	25626
Col Pct	100.0	100.0	100.0

FIGURE 6

NYC Adult Literacy: 1985–86



Achievement gains. Pretest and posttest data were obtained for 5,475 BE students (approximately 34%) and for 10,247 ESOL students (approximately 42%).[2] For this initial set of analyses, achievement gains for BE students were derived from the differences between posttest and pretest TABE Reading grade equivalents; achievement gains for ESOL students were derived from the differences between posttest and pretest John Test raw scores.[3]

Tables XIII and XIV show, respectively for BE and ESOL, mean achievement gains by entry achievement level. Mean gains (or losses) for BE are expressed in months, while mean gains for ESOL are expressed in raw scores. (For both tables, mean gains appear as the third entry in each cell.) It can be seen in both Table XII and Table XIII that achievement gains decline dramatically as students' entry achievement levels go up. On average, participating BE students show achievement gains of approximately 8.5 months, while participating ESOL students average 13.2 raw score points. See Figure 7.

---

[2] Program separations and late entry dates (e.g., almost 42% of BE students without posttests, and almost 36% of ESOL students without posttests entered the program after December 31, 1985) account for much of this apparent data loss. In addition, since this data base was derived from the first full year of citywide unit record data collection, it contains more missing data (of all kinds) than would be expected in subsequent years.

[3] We acknowledge the limitations of grade equivalents, raw scores and difference scores, however the initial data base and analysis plan precluded alternate methodologies for this analysis. Subsequent data bases and analytic designs will incorporate more rigorous approaches to defining achievement gains.

Table XIII

NYC ADULT LITERACY PROGRAMS: ANALYSES OF PROGRAM OUTCOMES
BE - MEAN GAIN AND RATE OF GAIN

VARIABLE IS PRE.TR.LEVEL
Cell Contents are....
Cell Counts
Column Percent
---Mean Score Of Variable ----GAIN.TR-----

0-2.9	811
	14.8
	18.176
3-4.9	1088
	19.9
	11.711
5-6.9	2150
	39.3
	7.379
7-8.9	1086
	19.8
	3.808
9-12.9	340
	6.2
	-3.547
Total N	5475
Col Pct	100.0
Mean	8.453

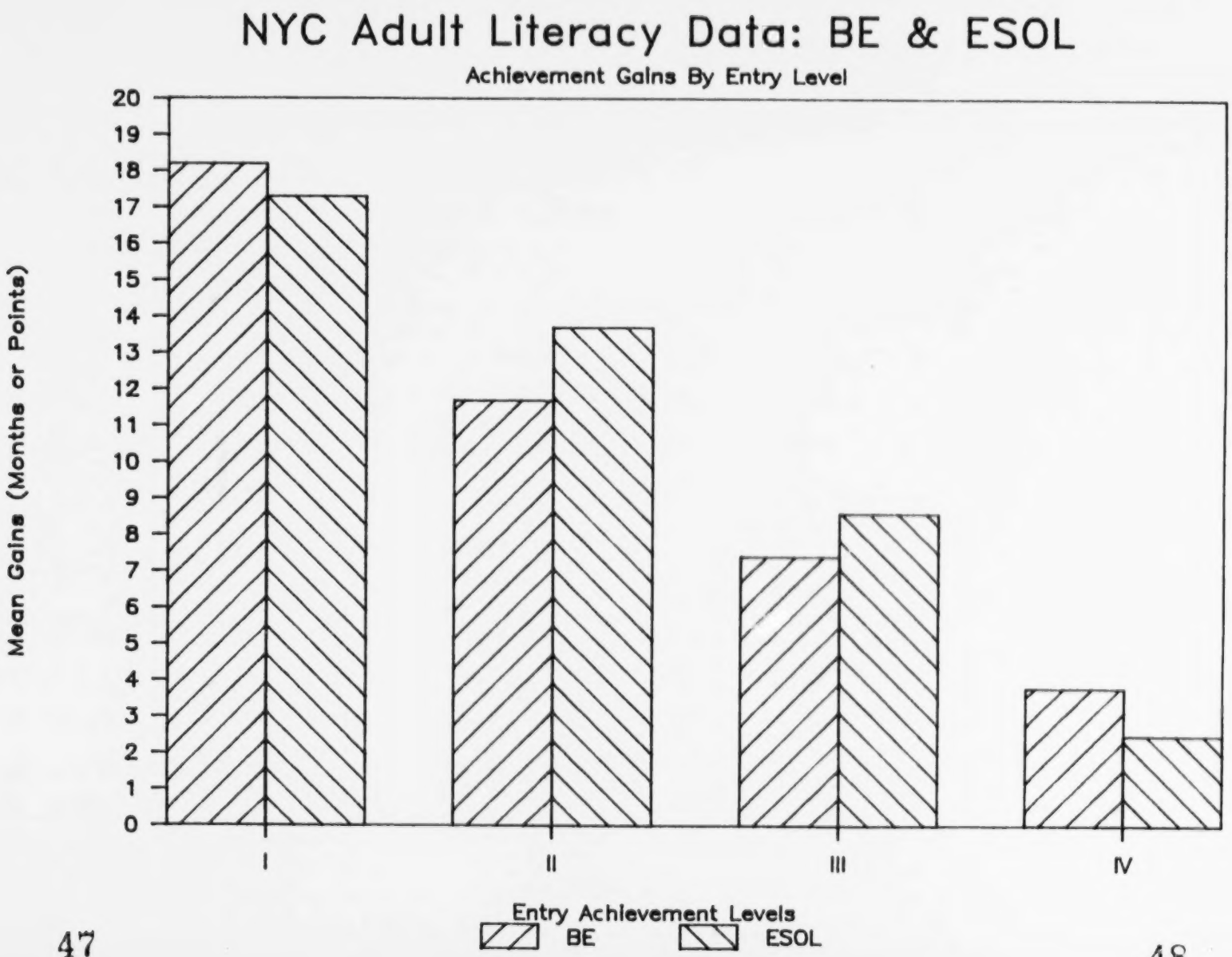
Table XIV

NYC ADULT LITERACY PROGRAMS: ANALYSES OF PROGRAM OUTCOMES
ESOL - MEAN GAIN AND RATE OF GAIN

VARIABLE IS PRE.JO.LEVEL
Cell Contents are....
Cell Counts
Column Percent
---Mean Score Of Variable ----GAIN.JO-----

0-20	4884
	47.7
	17.285
21-40	2239
	21.9
	13.728
41-60	1955
	19.1
	8.597
61 AND ABOVE	1169
	11.4
	2.477
Total N	10247
Col Pct	100.0
Mean	13.161

Figure 7


NYC Adult Literacy Data: BE & ESOL
Achievement Gains By Entry Level
Mean Gains (Months or Points)
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
I
II
III
IV
Entry Achievement Levels
BE
ESOL

In an attempt to establish achievement standards for BE and ESOL students, many have argued that, after 100 hours of contact, participants should gain approximately one year (i.e., ten months) if BE, or 20 points if ESOL. However, recall that the average BE participant had only 74 hours of contact, that the average ESOL participant had 82 hours of contact, and that achievement gains averaged 8.5 months for BE and 13.2 points for ESOL. To what extent are achievement gains related to contact hours?

Table XV shows, for BE and for ESOL, average achievement gains for groups of students with varying contact hours. It can be seen in the table that achievement gains generally increase for students with more program contact. These data are illustrated in Figure 8.

Table XV
Achievement Gains By Contact Hours

Contact Hours	Mean Gains BE	ESOL
< 20	6.6 months	9.9 points
21 - 40	7.9 months	11.8 points
41 - 60	8.1 months	12.4 points
61 - 80	8.9 months	13.1 points
81 -100	8.7 months	13.1 points
101 -120	11.4 months	13.1 points
>120	9.2 months	14.2 points

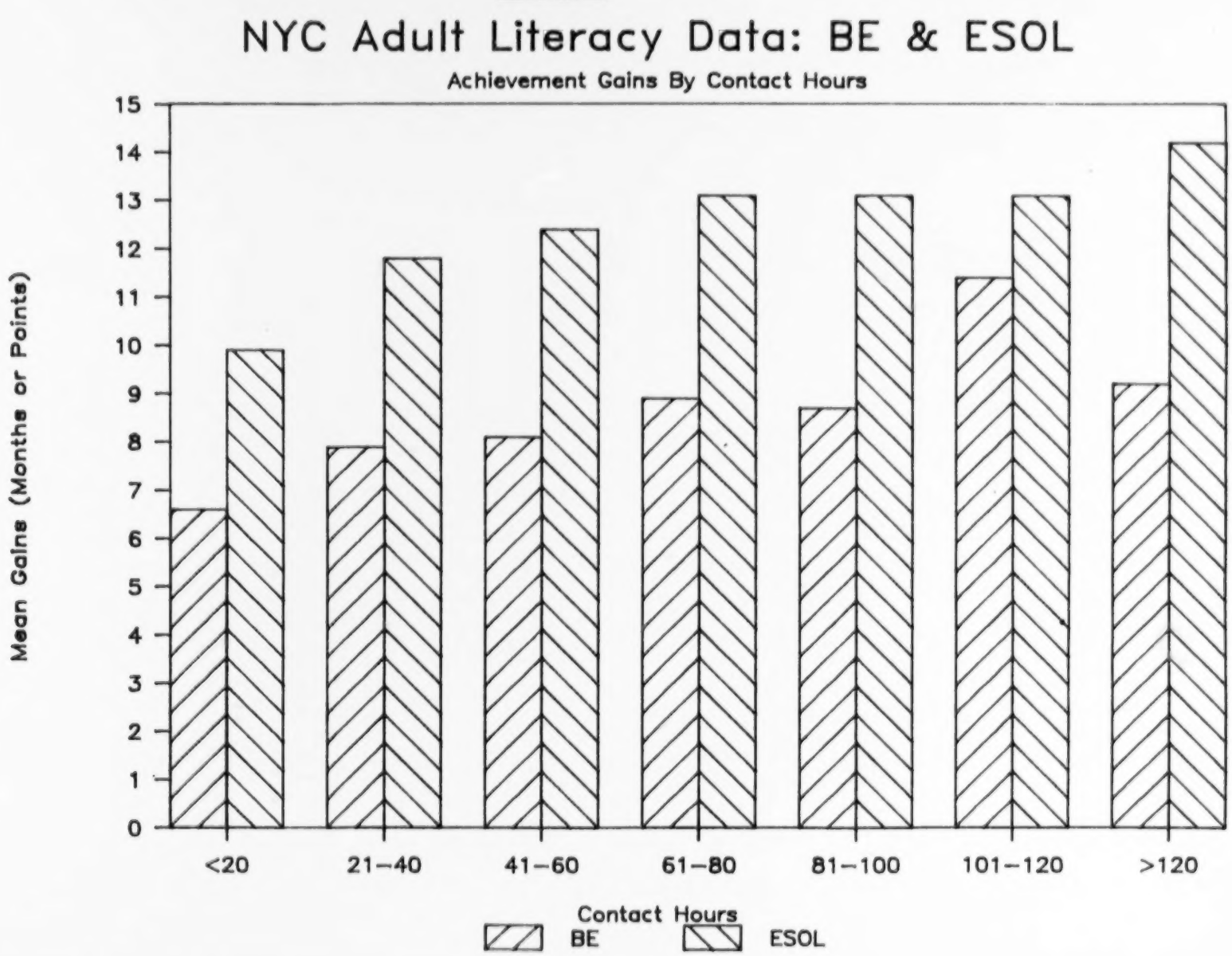
Tables XVI and XVII show, respectively for BE and ESOL, mean achievement gains as a function of both contact hours and entry achievement level. These tables, and their illustrations (Figures 9 and 10), demonstrate the complexities of developing

reasonable performance standards for BE and ESOL. For example, it can be seen in Table XVI that, for BE students with 81-100 hours of instruction, achievement gains averaged about 15 months for students entering at grade equivalents of 0.0 to 2.9, 12.3 months for students entering at 3.0 to 4.9, 8.4 months for those entering at 5.0 to 6.9, 3.8 months for students entering at 7.0 to 8.9, and -.3 months for students entering between 9.0 and 12.9. Examination of these tables reveals that expectations vary widely, but systematically, as a function of entry level and contact hours. It is likely that other variables also contribute to variance in achievement gains.

Multiple regression analysis. Multivariate techniques such as multiple regression analysis may be used to study the simultaneous impact of several variables on program outcomes. To demonstrate this approach we have completed one preliminary multiple regression analysis for each program utilizing the following independent variables:

- gender;
- ethnicity;
- employment status;
- public assistance status;
- immigrant status;
- LEP status;
- highest grade completed;
- contact hours;
- age; and
- entry level.

Figure 8


NYC Adult Literacy Data: BE & ESOL
Achievement Gains By Contact Hours
Mean Gains (Months or Points)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
<20
21–40
41–60
61–80
81–100
101–120
>120
Contact Hours
BE
ESOL

NYC ADULT LITERACY PROGRAMS ANALYSES OF PROGRAM OUTCOMES
BE - GAIN FOR CONTACT HOUR LEVEL

Cell Contents are....
Cell Counts
Column Percent
---Mean Score Of Variable

TABLE XVI

----GAIN.TR-----

PRE.TR.LEVEL

CONT HR LEVEL	0-2.9	3-4.9	5-6.9	7-8.9	9-12.9	MISSING	Row Totals
0-20 HRS	33	103	319	104	13		572
	4.1	9.5	14.8	9.6	3.8		10.4
	8.152	13.214	6.263	2.058	-4.077		6.624
21-40 HRS	50	64	131	74	12		331
	6.2	5.9	6.1	6.8	3.5		6.0
	13.500	11.281	7.084	2.676	7.250		7.885
41-60 HRS	53	106	197	98	23		477
	6.5	9.7	9.2	9.0	6.8		8.7
	14.226	9.802	7.914	4.092	3.783		8.050
61-80 HRS	49	60	138	62	14		323
	6.0	5.5	6.4	5.7	4.1		5.9
	18.898	11.067	8.080	4.855	-9.929		8.876
81-100 HRS	64	69	156	83	23		395
	7.9	6.3	7.3	7.6	6.8		7.2
	14.969	12.348	8.404	3.771	-0.348		8.673
101-120 HRS	69	88	174	69	25		425
	8.5	8.1	8.1	6.4	7.4		7.8
	21.174	14.261	9.690	6.841	-1.760		11.365
121-140 HRS	45	69	114	52	10		290
	5.5	6.3	5.3	4.8	2.9		5.3
	18.467	12.565	7.658	9.058	4.400		10.641
141-160 HRS	40	52	98	66	25		281
	4.9	4.8	4.6	6.1	7.4		5.1
	13.950	10.558	9.878	7.045	-0.440		9.000
161-180 HRS	35	50	79	50	25		239
	4.3	4.6	3.7	4.6	7.4		4.4
	25.171	12.340	7.823	1.720	-3.000		8.900
181-200 HRS	24	30	46	34	15		149
	3.0	2.8	2.1	3.1	4.4		2.7
	23.125	10.600	4.97[a]	5.618	-4.067		8.268
200+ HRS	116	113	148	75	32		484
	14.3	10.4	6.9	6.9	9.4		8.8
	19.621	9.186	6.791	4.480	-9.188		9.010
MISSING	233	284	550	319	123		1509
	28.7	26.1	25.6	29.4	36.2		27.6
	19.730	12.183	6.500	2.157	-6.008		7.675
Total N	811	1088	2150	1086	340	0	5475
Col Pct	100.0	100.0	100.0	100.0	100.0	0.0	100.0
Mean	18.176	11.711	7.379	3.808	-3.547	0.0	8.453

NYC ADULT LITERACY PROGRAMS: ANALYSES OF PROGRAM OUTCOMES
ESOL - GAIN FOR CONTACT HOUR LEVEL

Cell Contents are....
Cell Counts
Column Percent
---Mean Score Of Variable ----GAIN.JO-----

TABLE XVII

PRE.JO.LEVEL

CONT HR LEVEL	0-20	21-40	41-60	61 AND ABOVE	MISSING	Row Totals
0-20 HRS	362	116	104	81		663
	7.4	5.2	5.3	6.9		6.5
	12.666	8.026	7.038	3.741		9.881
21-40 HRS	320	120	108	63		611
	6.6	5.4	5.5	5.4		6.0
	15.103	9.950	9.065	3.302		11.807
41-60 HRS	568	204	167	97		1036
	11.6	9.1	8.5	8.3		10.1
	15.789	11.779	8.395	1.175		12.439
61-80 HRS	342	154	139	68		703
	7.0	6.9	7.1	5.8		6.9
	18.190	12.078	7.561	0.882		13.075
81-100 HRS	366	150	140	67		723
	7.5	6.7	7.2	5.7		7.1
	17.686	13.407	6.929	0.313		13.105
101-120 HRS	418	195	164	94		871
	8.6	8.7	8.4	8.0		8.5
	18.352	12.415	7.415	0.957		13.086
121-140 HRS	341	173	145	62		721
	7.0	7.7	7.4	5.3		7.0
	18.956	16.173	8.710	1.903		14.761
141-160 HRS	273	157	117	91		638
	5.6	7.0	6.0	7.8		6.2
	20.011	17.541	10.897	1.440		15.083
161-180 HRS	143	88	73	39		343
	2.9	3.9	3.7	3.3		3.3
	19.091	12.659	5.575	-1.974		12.169
181-200 HRS	114	69	49	35		267
	2.3	3.1	2.5	3.0		2.6
	18.381	13.203	9.408	0.143		12.993
200+ HRS	301	219	190	128		838
	6.2	9.8	9.7	10.9		8.2
	19.890	15.260	10.968	3.477		14.150
MISSING	1336	594	559	344		2833
	27.4	26.5	28.6	29.4		27.6
	17.165	15.148	8.886	4.297		13.546
Total N	4884	2239	1955	1169	0	10247
Col Pct	100.0	100.0	100.0	100.0	0.0	100.0
Mean	17.285	13.728	8.597	2.477	0.0	13.161

Figure 9

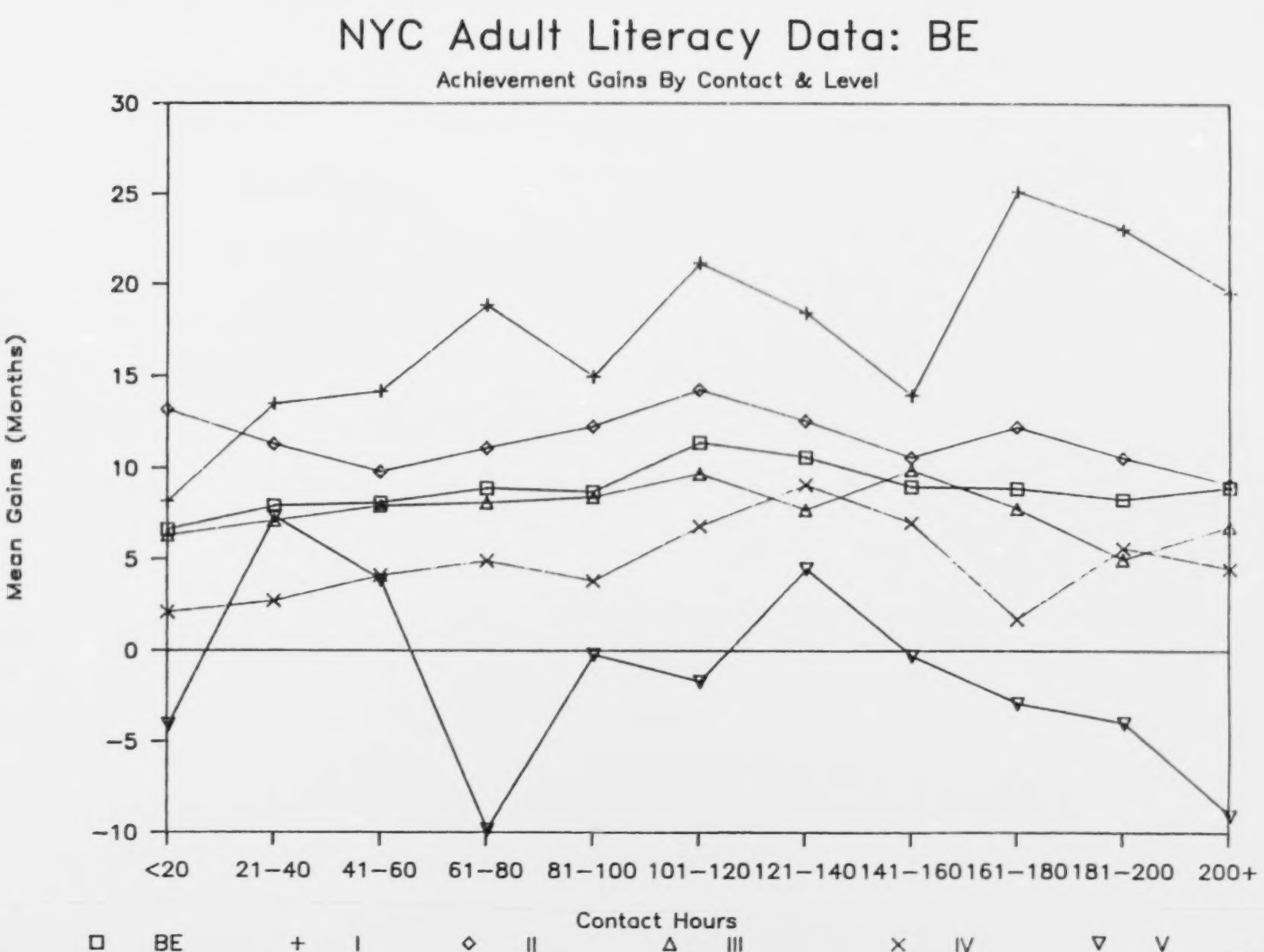
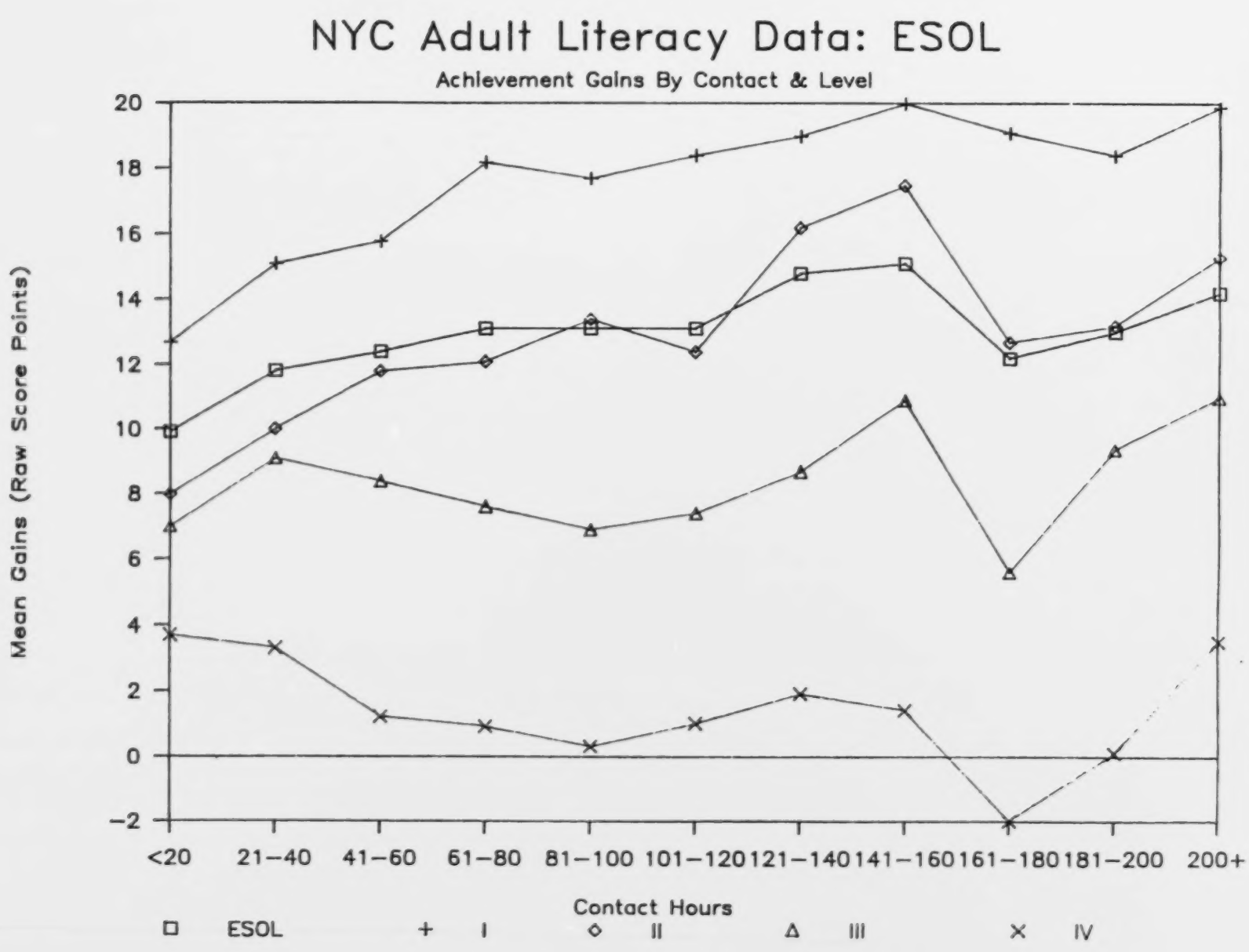

NYC Adult Literacy Data: BE
Achievement Gains By Contact & Level
Mean Gains (Months)
30
25
20
15
10
5
0
−5
−10
<20
21−40
41−60
61−80
81−100
101−120
121−140
141−160
161−180
181−200
200+
Contact Hours
BE
I
II
III
IV
V

Figure 10


NYC Adult Literacy Data: ESOL
Achievement Gains By Contact & Level
Mean Gains (Raw Score Points)
20
18
16
14
12
10
8
6
4
2
0
-2
<20
21-40
41-60
61-80
81-100
101-120
121-140
141-160
161-180
181-200
200+
Contact Hours
ESOL
I
II
III
IV

The dependent variable for the analysis was the TABE Reading gain score for BE and the John gain score for ESOL students with matched pre-post data.

For BE, the independent variables yielded a Multiple R of .3322, accounting for only 11 percent of the variance in TABE Reading gains; 89 percent of the variance is not explained by these variables. For ESOL, the independent variables yielded a Multiple R of .3918, accounting for only 15.4 percent of the variance in John score gains; 84.6 percent remains unexplained. While the preliminary regression analyses leave a great deal of the variances unaccounted for, entry level appears to show a statistically significant and meaningful effect in both the BE and ESOL analyses. In both cases, the higher the entry level, the smaller the gain. In addition, for the ESOL analysis, LEP status and employment status (if unemployed for less than 52 weeks) explain significant and meaningful proportions of variance in John Test gains - if LEP, gains are smaller; if unemployed for less than 52 weeks, gains are larger.

Due to the large samples in the BE and ESOL analyses, a number of the other independent variables also explain statistically significant amounts of variance. However, the magnitudes of these effects are too small to permit supportable inferences here.

We noted earlier the limitations of grade equivalents, raw scores and difference scores. However, we present the above regression results to illustrate a direction for future study -

to reliably describe the nature of the relationships between various program components, characteristics of participants, and project outcomes.

IV. Conclusions and Recommendations

This report has summarized the results of an initial analysis of the 1985-1986 New York City adult literacy data base. The data base which produced these analyses is, by far, more complex and complete than any other currently in existence. The demographic and outcome data described in this report offer a rich source of information about adult literacy programs and about adult learners. This information base must be fully explored.

Longitudinal analyses. In addition, we believe that the full research potential of the BOE/ALIES data systems cannot be realized unless files are combined over time to support longitudinal analyses. Metis Associates suggests strongly that longitudinal studies be designed for determining the multi-year impact and long-term effects of program participation on various cohorts of program participants. For example, do students retain or surpass their initial growth during a second year of participation? Does this vary for students with English language deficiencies? What segments of the served population continue beyond a single year? What is the relative impact of multi-year participation?

For the most part, the longitudinal studies will make use of

a systematically updated (possibly for three or more years) concatenated research file (the file created from the current work will provide the baseline for this ongoing activity). In addition, other sources of data will be considered for policy relevant longitudinal studies. For example, the Board of Education currently is developing an automated personnel system for adult and continuing education. Since this system will be linkable with the student data base (through class code designations), it would be possible to specify studies relating teacher demographics, experience, credentials and other variables with program impact.

Similarly, the Board of Education maintains a unit-record student data base for occupational education (secondary and adult). It should be possible to construct a student identification code from the occupational education file which matches the code used with ABE/HSE participants (i.e., three letters of the last name, one letter of the first name, and the birth date). Using these identification codes, it should be feasible to study movement to and from these various program types, and the relative impact of participation in each. (Note that for students who attended elementary, junior high school or high school in New York City, it is even conceivable to develop a "cradle-to-grave" longitudinal assessment system starting with the Board of Education's student record-keeping system. A comprehensive design for studies involving such a complete system should be considered when specifying the longitudinal analyses.

Finally, Metis Associates suggests that the LAC explore the feasibility of accessing student data from other data collections (i.e., in addition to those required by the system) in which LPAs may engage; e.g., attendance data, student affective data, observational or interview data, program follow-up data, or alternative evaluation/impact data. Such data may be used to augment and enrich the studies which have already been suggested.

In summary, we recommend that efforts be undertaken to;

- explore fully the implications of the data contained in this report;
- specify and conduct additional promising analyses;
- create and analyze a comparable citywide data base from the 1986-1987 BOE and ALIES data files (files which are more complete and more reliable than those used in this initial study); and
- combine the 1985-1986 and 1986-1987 data files into a longitudinal file, and conduct the kinds of longitudinal analyses suggested above.

A standing research advisory group with representation from the State Education Department, the Mayor's Office, each of the LPAs, and the LAC should be constituted to guide the future development of this activity.

Appendix A

In order to create an appropriate, combined analytic file, Metis Associates:

- uploaded the ALIES floppy disks onto a standard label, 9-track magnetic tape;
- combined the five ALIES file segments (containing multiple records per student) into a unitary structure resembling the BOE's layout;
- created description files for both the BOE and ALIES data containing data ranges, means, standard deviations, and analyses of missing data;
- performed various edit and internal consistency checks concerning the appropriateness of response codes and ranges, and the reliability of the data;
- after a review of the description files, after data cleanup resulting from editing activities, and after consultation with the LAC, Metis wrote logic which selected appropriate variables for analysis;
- re-coded certain data elements in order to create a uniform structure between the two components (e.g., BOE dates appear as mmddyy, while ALIES dates appear as ddMMMyy; some BOE population codes have different values than ALIES population codes);
- generated new variables for analyses (e.g., ages [from birth dates], gain scores [from pre-post matches]); and
- combined the two files into a unitary file, housed on a 9-track magnetic tape.

Note that the disk-to-tape uploading of ALIES files was accomplished with the aid of a commercial vendor (Microserve, Inc.). Mainframe data processing is accomplished in time-sharing mode, using Metis' on-site terminals to access the IBM mainframe facility at Princeton University.

Appendix B

Guide to Tables

The purpose of this guide is to describe how to read and interpret the twelve tables which follow. The example used in this guide is Table 1 - BE Entry Level By Gender. All tables in this appendix should be read and interpreted in a similar manner.

The example appears on the next page. Table 1 contains BE demographic information (row "1") about the entry level (row "3") and gender (column "A") of participating students. Row "2" contains a description of the contents of each of the table's cells. Specifically, it indicates that in each cell the first number is the actual number of students, the second number is the row percent, and the third number is the column percent.

It can be seen in the example that there are six (6) pretest entry level categories: 0-2.9; 3-4.9; 5-6.9; 7-8.9; 9-12.9; and missing. (Note that entry levels are recorded as grade equivalent scores derived from the TABE Reading test.) Similarly, there are three (3) categories for gender: men; women; and missing.

The cells created by rows 4 through 9 and columns a through c contain the actual demographic data for the BE students. This is known as the body of the table, and contains the number of students, row percent and column percent in each cell.

Cell 4a indicates that 697 men entered BE at a pretest achievement level of 0-2.9. The second number in the cell (row percent) indicates that 697 is 47.7% of all BE students who entered the program at a pretest achievement level of 0-2.9. The third number in the cell (column percent) indicates that 697 is 10.1% of the men in the BE program.

Cell 4c contains slightly different information, in that it indicates that 5 students who entered BE at the 0-2.9 level did not provide gender information. Similarly, cell 9a indicates that pretest data were not provided for 1589 BE men. The cells that contain information about missing data are very important when considering the generalizability of the data. There appear to be relatively few missing data about gender, while there are substantial missing pretest data. Caution must be applied when interpreting these results.

Column d contains the summary data for each row of the table. For example, row 4d shows that there were 1,462 BE students who pretested between 0.0 and 2.9. This represents 9.0% of all of the 16,266 BE students. However, since we see that 3,638 (22.4%) of the BE students were missing pretests, then we can say that, <u>of the BE students with pretests</u> (12,628 students), 11.6% (1,462/12,628) entered the program in the 0-2.9 category.

Similarly, row 10 contains the summary data for each column of the table. For example, row 10a shows that there are 6,869 men in BE. This represents 42.2% of the BE students. Note in row 10c that only 80 participants failed to indicate their gender. This represents .5% of the total BE population.

EXAMPLE

File LAC.FILE5 Table 1 Page 1

NYC ADULT LITERACY PROGRAMS: ANALYSES OF PROGRAM OUTCOMES
1 BE DEMOGRAPHIC INFORMATION

2 Cell Contents are....
Cell Counts
Row Percent
Column Percent

	A GENDER			
3 PRE TE LEVEL	a MEN	b WOMEN	c MISSING	d Row Totals
4 0-2.9	697	760	5	1462
	47.7	52.0	0.3	100.0
	10.1	8.2	6.3	9.0
5 3-4.9	975	1388	6	2369
	41.2	58.6	0.3	100.0
	14.2	14.9	7.5	14.6
6 5-6.9	2060	3071	22	5153
	40.0	59.6	0.4	100.0
	30.0	33.0	27.5	31.7
7 7-8.9	1070	1576	10	2656
	40.3	59.3	0.4	100.0
	15.6	16.9	12.5	16.3
8 9-12.9	478	506	4	988
	48.4	51.2	0.4	100.0
	7.0	5.4	5.0	6.1
9 MISSING	1589	2016	33	3638
	43.7	55.4	0.9	100.0
	23.1	21.6	41.2	22.4
	a	b	c	d
10 Total N	6869	9317	80	16266
Row Pct	42.2	57.3	0.5	100.0
Col Pct	100.0	100.0	100.0	100.0

File LAC.FILE5 Table 1 Page 1

NYC ADULT LITERACY PROGRAMS: ANALYSES OF PROGRAM OUTCOMES
BE DEMOGRAPHIC INFORMATION

Cell Contents are....
Cell Counts
Row Percent
Column Percent

GENDER

PRE TR LEVEL	MEN	WOMEN	MISSING	Row Totals
0-2.9	697	760	5	1462
	47.7	52.0	0.3	100.0
	10.1	8.2	6.3	9.0
3-4.9	975	1388	6	2369
	41.2	58.6	0.3	100.0
	14.2	14.9	7.5	14.6
5-6.9	2060	3071	22	5153
	40.0	59.6	0.4	100.0
	30.0	33.0	27.5	31.7
7-8.9	1070	1576	10	2656
	40.3	59.3	0.4	100.0
	15.6	16.9	12.5	16.3
9-12.9	478	506	4	988
	48.4	51.2	0.4	100.0
	7.0	5.4	5.0	6.1
MISSING	1589	2016	33	3638
	43.7	55.4	0.9	100.0
	23.1	21.6	41.2	22.4
Total N	6869	9317	80	16266
Row Pct	42.2	57.3	0.5	100.0
Col Pct	100.0	100.0	100.0	100.0

NYC ADULT LITERACY PROGRAMS: ANALYSES OF PROGRAM OUTCOMES
BE DEMOGRAPHIC INFORMATION

Cell Contents are....
Cell Counts
Row Percent
Column Percent

ETHNIC

PRE TR LEVEL	AMER INDIAN	BLACK	ASIAN	HISPANIC	WHITE	MISSING	Row Totals
0-2.9	9	1033	25	281	92	22	1462
	0.6	70.7	1.7	19.2	6.3	1.5	100.0
	10.5	10.8	6.4	5.7	8.4	10.0	9.0
3-4.9	13	1400	89	733	121	13	2369
	0.5	59.1	3.8	30.9	5.1	0.5	100.0
	15.1	14.7	22.6	14.8	11.1	5.9	14.6
5-6.9	34	3129	134	1455	322	79	5153
	0.7	60.7	2.6	28.2	6.2	1.5	100.0
	39.5	32.8	34.1	29.4	29.5	36.1	31.7
7-8.9	11	1533	57	827	206	22	2656
	0.4	57.7	2.1	31.1	7.8	0.8	100.0
	12.8	16.1	14.5	16.7	18.9	10.0	16.3
9-12.9	5	573	15	274	114	7	988
	0.5	58.0	1.5	27.7	11.5	0.7	100.0
	5.8	6.0	3.8	5.5	10.4	3.2	6.1
MISSING	14	1866	73	1372	237	76	3638
	0.4	51.3	2.0	37.7	6.5	2.1	100.0
	16.3	19.6	18.6	27.8	21.7	34.7	22.4
Total N	86	9534	393	4942	1092	219	16266
Row Pct	0.5	58.6	2.4	30.4	6.7	1.3	100.0
Col Pct	100.0	100.0	100.0	100.0	100.0	100.0	100.0

NYC ADULT LITERACY PROGRAMS: ANALYSES OF PROGRAM OUTCOMES
BE DEMOGRAPHIC INFORMATION

Cell Contents are....
Cell Counts
Row Percent
Column Percent

EMP.STATUS

PRE TR LEVEL	FULL TIME	PART TIME	UNEMPL AVL GE 52	UNEMPL AVL LT 52	UNEMPL NOT AVL	MISSING INVALID	Row Totals
0-2.9	444	139	346	183	286	64	1462
	30.4	9.5	23.7	12.5	19.6	4.4	100.0
	10.0	7.5	7.9	9.0	9.4	11.7	9.0
3-4.9	700	219	610	244	567	29	2369
	29.5	9.2	25.7	10.3	23.9	1.2	100.0
	15.8	11.9	14.0	12.0	18.6	5.3	14.6
5-6.9	1364	728	1324	591	991	155	5153
	26.5	14.1	25.7	11.5	19.2	3.0	100.0
	30.8	39.5	30.4	29.0	32.4	28.4	31.7
7-8.9	684	299	758	337	521	57	2656
	25.8	11.3	28.5	12.7	19.6	2.1	100.0
	15.4	16.2	17.4	16.5	17.1	10.4	16.3
9-12.9	238	64	321	165	183	17	988
	24.1	6.5	32.5	16.7	18.5	1.7	100.0
	5.4	3.5	7.4	8.1	6.0	3.1	6.1
MISSING	999	393	998	517	507	224	3638
	27.5	10.8	27.4	14.2	13.9	6.2	100.0
	22.6	21.3	22.9	25.4	16.6	41.0	22.4
Total N	4429	1842	4357	2037	3055	546	16266
Row Pct	27.2	11.3	26.8	12.5	18.8	3.4	100.0
Col Pct	100.0	100.0	100.0	100.0	100.0	100.0	100.0

NYC ADULT LITERACY PROGRAMS: ANALYSES OF PROGRAM OUTCOMES
ESOL DEMOGRAPHIC INFORMATION

Cell Contents are....
Cell Counts
Row Percent
Column Percent

GENDER

PRE JO LEVEL	MEN	WOMEN	MISSING	Row Totals
0-20	4583	7308	68	11959
	38.3	61.1	0.6	100.0
	48.4	49.3	31.9	48.8
21-40	1903	2958	43	4904
	38.8	60.3	0.9	100.0
	20.1	20.0	20.2	20.0
41-60	1609	2513	41	4163
	38.6	60.4	1.0	100.0
	17.0	17.0	19.2	17.0
61 AND ABOVE	1031	1542	28	2601
	39.6	59.3	1.1	100.0
	10.9	10.4	13.1	10.6
MISSING	336	492	33	861
	39.0	57.1	3.8	100.0
	3.6	3.3	15.5	3.5
Total N	9462	14813	213	24488
Row Pct	38.6	60.5	0.9	100.0
Col Pct	100.0	100.0	100.0	100.0

NYC ADULT LITERACY PROGRAMS: ANALYSES OF PROGRAM OUTCOMES
ESOL DEMOGRAPHIC INFORMATION

Cell Contents are....
Cell Counts
Row Percent
Column Percent

ETHNIC

PRE JO LEVEL	AMER INDIAN	BLACK	ASIAN	HISPANIC	WHITE	MISSING	Row Totals
0-20	30	1054	1798	7730	1281	66	11959
	0.3	8.8	15.0	64.6	10.7	0.6	100.0
	55.6	46.9	37.8	54.0	44.3	31.1	48.8
21-40	7	493	1033	2691	645	35	4904
	0.1	10.1	21.1	54.9	13.2	0.7	100.0
	13.0	22.0	21.7	18.8	22.3	16.5	20.0
41-60	7	391	1100	2081	538	46	4163
	0.2	9.4	26.4	50.0	12.9	1.1	100.0
	13.0	17.4	23.1	14.5	18.6	21.7	17.0
61 AND ABOVE	9	220	704	1267	372	29	2601
	0.3	8.5	27.1	48.7	14.3	1.1	100.0
	16.7	9.8	14.8	8.8	12.9	13.7	10.6
MISSING	1	87	123	556	58	36	861
	0.1	10.1	14.3	64.6	6.7	4.2	100.0
	1.9	3.9	2.6	3.9	2.0	17.0	3.5
Total N	54	2245	4758	14325	2894	212	24488
Row Pct	0.2	9.2	19.4	58.5	11.8	0.9	100.0
Col Pct	100.0	100.0	100.0	100.0	100.0	100.0	100.0

NYC ADULT LITERACY PROGRAMS: ANALYSES OF PROGRAM OUTCOMES
ESOL DEMOGRAPHIC INFORMATION

Cell Contents are....
Cell Counts
Row Percent
Column Percent

EMP.STATUS

PRE JO LEVEL	FULL TIME	PART TIME	UNEMPL AVL GE 52	UNEMPL AVL LT 52	UNEMPL NOT AVL	MISSING INVALID	Row Totals
0-20	5461	779	1635	1492	2171	421	11959
	45.7	6.5	13.7	12.5	18.2	3.5	100.0
	50.9	45.4	46.4	46.9	48.4	49.5	48.8
21-40	2042	336	771	698	920	137	4904
	41.6	6.9	15.7	14.2	18.8	2.8	100.0
	19.0	19.6	21.9	21.9	20.5	16.1	20.0
41-60	1649	308	629	614	829	134	4163
	39.6	7.4	15.1	14.7	19.9	3.2	100.0
	15.4	17.9	17.9	19.3	18.5	15.7	17.0
61 AND ABOVE	1185	196	376	327	436	81	2601
	45.6	7.5	14.5	12.6	16.8	3.1	100.0
	11.0	11.4	10.7	10.3	9.7	9.5	10.6
MISSING	396	97	109	50	131	78	861
	46.0	11.3	12.7	5.8	15.2	9.1	100.0
	3.7	5.7	3.1	1.6	2.9	9.2	3.5
Total N	10733	1716	3520	3181	4487	851	24488
Row Pct	43.8	7.0	14.4	13.0	18.3	3.5	100.0
Col Pct	100.0	100.0	100.0	100.0	100.0	100.0	100.0

NYC ADULT LITERACY PROGRAMS: ANALYSES OF PROGRAM OUTCOMES
BE - POPULATION CATEGORY

The Column Variable is PRE.TR.LEVEL
Multiple Response Row Variable PUBLIC.ASSIST
to Variable LEP
Cell Contents are....
Cell Counts
Row Percent
Column Percent

PRE.TR.LEVEL

	0-2.9	3-4.9	5-6.9	7-8.9	9-12.9	MISSING	Row Totals
PUBLIC ASST	427	734	1442	753	288	1195	4839
	8.8	15.2	29.8	15.6	6.0	24.7	100.0
	29.2	31.0	28.0	28.4	29.1	32.8	29.7
IMMIGRANT	416	544	1010	475	116	719	3280
	12.7	16.6	30.8	14.5	3.5	21.9	100.0
	28.5	23.0	19.6	17.9	11.7	19.8	20.2
LEP	50	152	248	126	32	327	935
	5.3	16.3	26.5	13.5	3.4	35.0	100.0
	3.4	6.4	4.8	4.7	3.2	9.0	5.7
Total N	1462	2369	5153	2656	988	3638	16266
Row Pct	9.0	14.6	31.7	16.3	6.1	22.4	100.0
Col Pct	100.0	100.0	100.0	100.0	100.0	100.0	100.0

NYC ADULT LITERACY PROGRAMS: ANALYSES OF PROGRAM OUTCOMES
ESOL - POPULATION CATEGORY

The Column Variable is PRE.JO.LEVEL
Multiple Response Row Variable PUBLIC.ASSIST
to Variable LEP
Cell Contents are....
Cell Counts
Row Percent
Column Percent

PRE.JO.LEVEL

	0-20	21-40	41-60	61 AND ABOVE	MISSING	Row Totals
PUBLIC ASST	1365	705	696	379	64	3209
	42.5	22.0	21.7	11.8	2.0	100.0
	11.4	14.4	16.7	14.6	7.4	13.1
IMMIGRANT	8099	3251	2639	1767	522	16278
	49.8	20.0	16.2	10.9	3.2	100.0
	67.7	66.3	63.4	67.9	60.6	66.5
LEP	7008	2886	2511	1695	549	14649
	47.8	19.7	17.1	11.6	3.7	100.0
	58.6	58.8	60.3	65.2	63.8	59.8
Total N	11959	4904	4163	2601	861	24488
Row Pct	48.8	20.0	17.0	10.6	3.5	100.0
Col Pct	100.0	100.0	100.0	100.0	100.0	100.0

NYC ADULT LITERACY PROGRAMS: ANALYSES OF PROGRAM OUTCOMES
BE - PREVIOUS EDUCATION

Cell Contents are....
Cell Counts
Row Percent
Column Percent

PRE.TR.LEVEL

HIGHEST GR COMP	0-2.9	3-4.9	5-6.9	7-8.9	9-12.9	MISSING	Row Totals
1	16	2	1	1	1	17	38
	42.1	5.3	2.6	2.6	2.6	44.7	100.0
	1.1	0.1	0.0	0.0	0.1	0.5	0.2
2	30	6	7			39	82
	36.6	7.3	8.5			47.6	100.0
	2.1	0.3	0.1			1.1	0.5
3	41	32	17	7	2	62	161
	25.5	19.9	10.6	4.3	1.2	38.5	100.0
	2.8	1.4	0.3	0.3	0.2	1.7	1.0
4	71	35	35	5	2	59	207
	34.3	16.9	16.9	2.4	1.0	28.5	100.0
	4.9	1.5	0.7	0.2	0.2	1.6	1.3
5	69	53	47	17	5	57	248
	27.8	21.4	19.0	6.9	2.0	23.0	100.0
	4.7	2.2	0.9	0.6	0.5	1.6	1.5
6	97	104	96	29	10	115	451
	21.5	23.1	21.3	6.4	2.2	25.5	100.0
	6.6	4.4	1.9	1.1	1.0	3.2	2.8
7	98	119	125	40	8	123	513
	19.1	23.2	24.4	7.8	1.6	24.0	100.0
	6.7	5.0	2.4	1.5	0.8	3.4	3.2
8	127	218	328	152	30	272	1127
	11.3	19.3	29.1	13.5	2.7	24.1	100.0
	8.7	9.2	6.4	5.7	3.0	7.5	6.9
9	190	336	735	341	94	603	2299
	8.3	14.6	32.0	14.8	4.1	26.2	100.0
	13.0	14.2	14.3	12.8	9.5	16.6	14.1
10	182	328	1033	585	162	647	2937
	6.2	11.2	35.2	19.9	5.5	22.0	100.0
	12.4	13.8	20.0	22.0	16.4	17.8	18.1

NYC ADULT LITERACY PROGRAMS: ANALYSES OF PROGRAM OUTCOMES
BE - PREVIOUS EDUCATION

Cell Contents are....
Cell Counts
Row Percent
Column Percent

PRE.TR.LEVEL

HIGHEST GR COMP	0-2.9	3-4.9	5-6.9	7-8.9	9-12.9	MISSING	Row Totals
11	136	247	745	440	180	506	2254
	6.0	11.0	33.1	19.5	8.0	22.4	100.0
	9.3	10.4	14.5	16.6	18.2	13.9	13.9
12	108	121	316	224	120	307	1196
	9.0	10.1	26.4	18.7	10.0	25.7	100.0
	7.4	5.1	6.1	8.4	12.1	8.4	7.4
GREATER THAN HS	6	5	17	12	10	29	79
	7.6	6.3	21.5	15.2	12.7	36.7	100.0
	0.4	0.2	0.3	0.5	1.0	0.8	0.5
HAS DIPLOMA	1	5	5	10	10	3	34
	2.9	14.7	14.7	29.4	29.4	8.8	100.0
	0.1	0.2	0.1	0.4	1.0	0.1	0.2
MISSING INVALID	290	758	1646	793	354	799	4640
	6.3	16.3	35.5	17.1	7.6	17.2	100.0
	19.8	32.0	31.9	29.9	35.8	22.0	28.5
Total N	1462	2369	5153	2656	988	3638	16266
Row Pct	9.0	14.6	31.7	16.3	6.1	22.4	100.0
Col Pct	100.0	100.0	100.0	100.0	100.0	100.0	100.0

NYC ADULT LITERACY PROGRAMS: ANALYSES OF PROGRAM OUTCOMES
BE - PREVIOUS EDUCATION

Cell Contents are....
Cell Counts
Row Percent
Column Percent

PRE.TR.LEVEL

US EDUCATION	0-2.9	3-4.9	5-6.9	7-8.9	9-12.9	MISSING	Row Totals
NONE	283	355	511	238	63	306	1756
	16.1	20.2	29.1	13.6	3.6	17.4	100.0
	19.4	15.0	9.9	9.0	6.4	8.4	10.8
1 YEAR	33	27	36	17	2	48	163
	20.2	16.6	22.1	10.4	1.2	29.4	100.0
	2.3	1.1	0.7	0.6	0.2	1.3	1.0
2 YEARS	32	16	33	19	3	40	143
	22.4	11.2	23.1	13.3	2.1	28.0	100.0
	2.2	0.7	0.6	0.7	0.3	1.1	0.9
3-5 YEARS	89	67	104	43	8	82	393
	22.6	17.0	26.5	10.9	2.0	20.9	100.0
	6.1	2.8	2.0	1.6	0.8	2.3	2.4
6-10 YEARS	407	623	1412	737	212	706	4097
	9.9	15.2	34.5	18.0	5.2	17.2	100.0
	27.8	26.3	27.4	27.7	21.5	19.4	25.2
11-15 YEARS	152	287	839	612	274	396	2560
	5.9	11.2	32.8	23.9	10.7	15.5	100.0
	10.4	12.1	16.3	23.0	27.7	10.9	15.7
16+ YEARS		5	6	6	4	1	22
		22.7	27.3	27.3	18.2	4.5	100.0
		0.2	0.1	0.2	0.4	0.0	0.1
MISSING	466	989	2212	984	422	2059	7132
INVALID	6.5	13.9	31.0	13.8	5.9	28.9	100.0
	31.9	41.7	42.9	37.0	42.7	56.6	43.8
Total N	1462	2369	5153	2656	988	3638	16266
Row Pct	9.0	14.6	31.7	16.3	6.1	22.4	100.0
Col Pct	100.0	100.0	100.0	100.0	100.0	100.0	100.0

NYC ADULT LITERACY PROGRAMS: ANALYSES OF PROGRAM OUTCOMES
ESOL - PREVIOUS EDUCATION

Cell Contents are....
Cell Counts
Row Percent
Column Percent

PRE.JO.LEVEL

HIGHEST GR COMP	0-20	21-40	41-60	61 AND ABOVE	MISSING	Row Totals
1	68	17	3	3	2	93
	73.1	18.3	3.2	3.2	2.2	100.0
	0.6	0.3	0.1	0.1	0.2	0.4
2	102	33	20	8	5	168
	60.7	19.6	11.9	4.8	3.0	100.0
	0.9	0.7	0.5	0.3	0.6	0.7
3	206	79	36	17	9	347
	59.4	22.8	10.4	4.9	2.6	100.0
	1.7	1.6	0.9	0.7	1.0	1.4
4	230	71	70	30	8	409
	56.2	17.4	17.1	7.3	2.0	100.0
	1.9	1.4	1.7	1.2	0.9	1.7
5	312	120	68	36	10	546
	57.1	22.0	12.5	6.6	1.8	100.0
	2.6	2.4	1.6	1.4	1.2	2.2
6	752	251	174	87	26	1290
	58.3	19.5	13.5	6.7	2.0	100.0
	6.3	5.1	4.2	3.3	3.0	5.3
7	402	157	125	82	19	785
	51.2	20.0	15.9	10.4	2.4	100.0
	3.4	3.2	3.0	3.2	2.2	3.2
8	804	273	247	118	30	1472
	54.6	18.5	16.8	8.0	2.0	100.0
	6.7	5.6	5.9	4.5	3.5	6.0
9	624	236	248	133	26	1267
	49.3	18.6	19.6	10.5	2.1	100.0
	5.2	4.8	6.0	5.1	3.0	5.2
10	744	307	211	145	48	1455
	51.1	21.1	14.5	10.0	3.3	100.0
	6.2	6.3	5.1	5.6	5.6	5.9

NYC ADULT LITERACY PROGRAMS: ANALYSES OF PROGRAM OUTCOMES
ESOL - PREVIOUS EDUCATION

Cell Contents are....
Cell Counts
Row Percent
Column Percent

PRE.JO.LEVEL

HIGHEST GR COMP	0-20	21-40	41-60	61 AND ABOVE	MISSING	Row Totals
11	463	216	193	118	38	1028
	45.0	21.0	18.8	11.5	3.7	100.0
	3.9	4.4	4.6	4.5	4.4	4.2
12	2062	1087	962	575	79	4765
	43.3	22.8	20.2	12.1	1.7	100.0
	17.2	22.2	23.1	22.1	9.2	19.5
GREATER THAN HS	594	318	370	299	21	1602
	37.1	19.9	23.1	18.7	1.3	100.0
	5.0	6.5	8.9	11.5	2.4	6.5
HAS DIPLOMA	85	61	63	34	6	249
	34.1	24.5	25.3	13.7	2.4	100.0
	0.7	1.2	1.5	1.3	0.7	1.0
MISSING INVALID	4511	1678	1373	916	534	9012
	50.1	18.6	15.2	10.2	5.9	100.0
	37.7	34.2	33.0	35.2	62.0	36.8
Total N	11959	4904	4163	2601	861	24488
Row Pct	48.8	20.0	17.0	10.6	3.5	100.0
Col Pct	100.0	100.0	100.0	100.0	100.0	100.0

NYC ADULT LITERACY PROGRAMS: ANALYSES OF PROGRAM OUTCOMES
ESOL - PREVIOUS EDUCATION

Cell Contents are....
Cell Counts
Row Percent
Column Percent

PRE.JO.LEVEL

US EDUCATION	0-20	21-40	41-60	61 AND ABOVE	MISSING	Row Totals
NONE	4275	1856	1631	952	165	8879
	48.1	20.9	18.4	10.7	1.9	100.0
	35.7	37.8	39.2	36.6	19.2	36.3
1 YEAR	185	85	96	58	7	431
	42.9	19.7	22.3	13.5	1.6	100.0
	1.5	1.7	2.3	2.2	0.8	1.8
2 YEARS	72	36	54	44	6	212
	34.0	17.0	25.5	20.8	2.8	100.0
	0.6	0.7	1.3	1.7	0.7	0.9
3-5 YEARS	86	36	60	41	3	226
	38.1	15.9	26.5	18.1	1.3	100.0
	0.7	0.7	1.4	1.6	0.3	0.9
6-10 YEARS	71	39	41	32	7	190
	37.4	20.5	21.6	16.8	3.7	100.0
	0.6	0.8	1.0	1.2	0.8	0.8
11-15 YEARS	54	52	36	21	3	166
	32.5	31.3	21.7	12.7	1.8	100.0
	0.5	1.1	0.9	0.8	0.3	0.7
16+ YEARS	3	3	2	2		10
	30.0	30.0	20.0	20.0		100.0
	0.0	0.1	0.0	0.1		0.0
MISSING	7213	2797	2243	1451	670	14374
INVALID	50.2	19.5	15.6	10.1	4.7	100.0
	60.3	57.0	53.9	55.8	77.8	58.7
Total N	11959	4904	4163	2601	861	24488
Row Pct	48.8	20.0	17.0	10.6	3.5	100.0
Col Pct	100.0	100.0	100.0	100.0	100.0	100.0